

ORIENTATION PROGRAMME OF IED TEACHERS FOR THE
STATE OF MANIPUR

(November 4 - 8, 1991)

Venue : DIET HALL, SCERT MANIPUR, IMPHAL

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N C E R T
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TABLE OF CONTENTS

(Nov. 4 - 8, 1991)

- A) Brief Report of the Orientation Programme
- B) Programme
 - 1. Basic Concepts
 - 2. Care, Education and Management of Special Children.
 - 3. Mental Retardation: Medical Aspects - with reference to Incidence, causation and prevention.
 - 4. Functional Assessment
 - 5. Curriculum Outline for Mentally Retarded Children in Integrated Set up.
 - 6. Education of the Mentally Handicapped.
 - 7. Disorder of Speech, Language & Hearing.
 - 8. Integrated Education of the Visually Handicapped.
 - 9. Aids and Equipments of the Resource Room.
 - 10. Assignments
 - 11. Key to Assignments

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P R E F A C E

An Orientation Programme of IED Teachers for the State of Manipur was organized by Regional College of Education at SCERT, Manipur, Imphal during November 4-8, 1992. All the participants engaged in the education of disabled were invited for this programme. This was a new programme of its own nature in the State of Manipur.

The Programme was directed by Dr. S. K. Goel, Reader in Special Education. Besides lectures and group discussions on all the five disability areas, viz, Mental Retardation, Learning Disability, Speech and Hearing Disorders, Visual Handicap and Orthopaedic Disabilities, practical demonstration was given to prepare low-cost teaching aids for the handicapped.

I very much appreciate the role of Dr. S. K. Goel who conducted this programme at Imphal especially at a time when there were Deepawali holidays and all the participants expressed deep satisfaction over the smooth and successful conduct of this programme. I hope the report of the programme in the present form will be found useful by the teachers and other professionals who are engaged in the field of handicapped welfare. I am grateful to Extension Deptt. for rendering all possible assistance.

March 16, 1992
Regional College of Edn.,
Bhubaneswar.

Sd/-
Prof. K. C. Panda
Principal

BRIEF REPORT OF THE PROGRAMME ENTITLED "ORIENTATION
IED TEACHERS FOR THE STATE OF MANIPUR "

(November 4-8, 1991)

The Programme started on 04 November, 1991 in the DIET Hall, SCERT, Manipur (Imphal). After welcoming the participants, the Programme Director highlighted the following objectives of this Orientation programme.

- To acquaint the teachers with different areas of disability, their causes and classifications.
- To enable the teachers in acquiring skills in diagnostic prescriptive teaching techniques.
- To orient the teachers about the various ways of integration of different categories of exceptional children.
- To enable the teachers develop their resource rooms with necessary aids and equipments.
- To help the teachers acquire their competencies in developing IEP.
- To orient the teachers about the psycho-educational characteristics for curriculum planning and implementation.
- To orient the teachers about the creative art activities for the disabled.
- To enable the teachers understand about the steps in educational programming for handicapped.

The programme continued for five days and all the five disability areas, viz, Mental Retardation, Visual Handicap, Hearing Disorders, Learning Disabilities and Orthopaedic Disabilities were covered. The salient features of some of the important issues like concept of Special Education, Psychological effects of disability

Resource Programmes, Role of Professional Organizations/
Family/Community, Educational Programming, Service
Delivery Options, LRE, Task Analysis, etc. were also
discussed. In all 29 lectures were delivered during
the programme by internal and external resource persons
on all the disability areas. During these five days,
one session was devoted to "Group Discussion-cum-
Assignment Completion Work". Exercises from all the
five disability areas were given to all the participants
and the average response to these exercises was 80%.
Practical demonstration was given to prepare low-cost
teaching aids for the handicapped. It was a great
pleasure to meet Dr.K.Mani Singh, Director, SCERT, Manipur
and his staff members. I express my sincere and heartfelt
gratitude to Dr.K.C.Panda, Principal, Mr.K.Mani Singh,
Director SCERT; Mr. M.Labanga Singh, O I/C (IED Scheme);
Mr. N.Kula Singh, Project Officer and all the staff
members; internal and external resource persons
(list attached); Mr. B.B.Singh, APC and his staff members
(Extension Department) for providing their whole hearted
support and cooperation. It was a great pleasure to see
the enthusiasm and active participation of all the
participants in all the lectures and group discussions.
The dedicated efforts and sincere devotion of all the
participants shows that the future of disabled persons
is bright and this IED scheme would be implemented
effectively in the State of Manipur under the dynamic
leadership of Director, SCERT.

It was not possible to include all the papers in this report but, however, an attempt has been made to present the salient features through some of the papers, basic concepts, assignment, etc. included in this document. It is a pleasure to include papers of Prof. K.C.Panda, Principal, RCE, Bhubaneswar and Dr. Jayanthi Narayan, Asst. Professor, NIMH for the benefit of participants. It is hoped that this small document will prove useful to the participants.



(DR. S.K. GOEL)
PROGRAMME DIRECTOR

ORIENTATION PROGRAMME FOR IED TEACHER FOR THE
STATE OF MANIPUR FROM 4TH TO 8TH NOVEMBER, 1991.

LIST OF EXTERNAL RESOURCE PERSONS

<u>Sl.No.</u>	<u>Name and Designation</u>	<u>Office</u>
1.	Mr. M.Labanga Singh Lecturer & In-charge of IED scheme.	SCERT, Manipur, P.O. Imphal
2.	Mr. N. Kula Singh, Project Officer	-do-
3.	Mr. Dr. Ng. Swarnalata Devi Medical Officer	Bashikhong Primary Health Centre, Imphal
4.	Mr. U. Nabakishore, Information Officer	District Rehabilitation, Centre, Imphal.

Internal Resource Persons

1.	Dr. S.K. Goel Programme Director	R.C.E., Bhubaneswar.
2.	Dr. S.P. Anand Reader in Education,	R.C.E., Bhubaneswar.

LIST OF THE PARTICIPANTS

ORIENTATION PROGRAMME FOR I.E.D. TEACHER (PRIMARY
& MIDDLE LEVEL) AT DIET HALL (SCERT), IMPHAL FROM
4TH TO 8TH NOVEMBER, 1991.

<u>Sl. No.</u>	<u>Name of the Teacher and Designation</u>	<u>Name of the School</u>
1.	Ch.Biren Singh, Headmaster	Ningombam Govt.Junior High School.
2.	Th.Nandakumar Singh, Headmaster.	Khongangpheidekpi Primary School
3.	T.Ibobi Singh, Head Pandit	Keishampat Boys L.P.School.
4.	K.Chaeba Singh, Headmaster	Naorem Babu Singh Jr. High School.
5.	M.Gobardhan Singh, Headmaster	Noor Ali Primary School.
6.	K.Joychandra Singh, Asst.Teacher	Awang Kongpal Malati Primary School.
7.	M.Gopalmacha Singh, Asst.Teacher	Netaje L.P.School
8.	H.Karabira Singh Asst.Teacher	Samurou Jr.High School
9.	H.Gopal Singh Headmaster	Pishum Primary School.
10.	Y.Yaima Singh, Headmaster	Minuthongh Faizia Primary School
11.	K.Madhumani Singh Headmaster	Uchiwa Primary School (A)
12.	A. Shamu Singh, Headmaster.	Uchiwa Jr.High School
13.	K.Rajen Singh,A.T,	Netaji Primary School.
14.	K.Susila Devi,A.T.	Lilong Girls Jr.High School.
15.	G.Bijaya Devi, A.T.	The Standard English High School
16.	H.Jagachatei Devi,A.T	The Brahampur Jr.High School.
17.	S.Surjaboro Singh,A.T.	Waiton Primary School
18.	T.Bhudhichand Singh,H.P.	S.Chaoba Singh L.P.School
19.	L.Kokngang Singh,H.P.	Haobam Marak Girls H.P.School(A)
20.	A.Chaoba Singh,H.M.	Heirangoithong Govt.Boys Jr.High School.
21.	S.Krishnamohan Sharma, Headmaster.	Mahatma Gandhi Smark Jr. High School.
22.	Kh.Udoy Singh,A.T.	Thangmeiband Primary School
23.	M.Sobita Devi, Instructor	Manipur State Council for Child Welfare,Moirangkom.
24.	H.Sinodini Devi, H.M.	Ramani Primary School
25.	M.Ketuki Devi,A.T.	Khonghampat Primary School.
26.	T.Tikendra Singh,A.T.	John's English School
27.	Md.Serajuddin, Headmaster.	Bengoon Govt.Jr.High Madrassa

<u>Sl. No.</u>	<u>Name of the Teacher and Designation</u>	<u>Name of the School</u>
28.	A.Kamalakanta Sharma, Asst.Teacher	Dharmalaya High School.
29.	A.Manihar Singh, Asst.Teacher.	Popular Jr.High School.
30.	A.Lokendro Singh, Headmaster	Sekmai Khunou Primary School.
31.	O.Chaoyaima Singh, Headmaster	Kwakeithel Boys Jr.High School
32.	S.Birachandra Singh, Headmaster	Madan Mohan Primary School
33.	N.Birendra Singh, Headmaster,	Lamlongel Primary School
34.	Th.Kamala Devi, Asst.Teacher.	SCERT/Manipur, Imphal
35.	Y.Gogonchandra Singh, Asst.Teacher	Wangkei Konsum Leikai, Imphal
36.	N.Bidhu Singh, Asst.Teacher	Sinjubam Jr.High School.
37.	Th.Ruhinikumar Singh, Asst.Teacher	Yaingangpokpi Hr.High School.
38.	M.Lokeshore Singh, Asst.Teacher	Mayang Imphal Hr.Sec.School.
39.	K.Mangi Singh, Asst.Teacher	Theiyong Primary School
40.	Kh.Kebol Singh, Asst.Teacher.	Konthongam Primary School.

ORIENTATION OF IED TEACHERS FOR THE STATE OF MANIPUR
WITH EFFECT FROM 4/11/91 TO 8/11/91 AT DIET, HALL MANIPUR

P R O G R A M M E

Date	Resource person	Time	Topic
4.11.91	SKG	9.30-10.00	Highlights of programme
	SKG/SPA	10.00-11.00	Concepts of Spl.Edn. & IED Scheme.
		11.00-11.15	Tea Break
	MLS	11.15 to 12.15	Types of Disabilities
	M.K.S.	12.15 to 1.15	Psychological effect of Disabilities.
		1.15 to 2.15	L u n c h
	Dr.S.D.	2.15 to 3.15	Concept of Mental Retardation.
		3.15 to 3.30	Tea.
	UNK	3.30 to 4.30	Edn.& Trg. of MR.
5.11.91	SKG	9.00 to 10.00AM	Concept of Learning Disability.
	SPA	10.00 to 11.00	Etiology of L.D.
		11.00 to 11.15	TEA
	Dr.S.D.	11.15 to 12.15	Identification of L.D.
	NKS	12.15 to 1.15	Curriculum adjustment.
		1.15 to 2.15	LUNCH
	MLS	2.15 to 3.15	Teaching methods for L.D.
		3.15 to 3.30	TEA
	UNK	3.30 to 4.30	Special Instructional materials for L.D.
6.11.91	SKG	9.00 to 10.00	Concept of VIC
	SPA	10.00 to 11.00	Psycho-Social Implications.
		11.00 to 11.15	TEA
	Dr.S.D.	11.15 to 12.15	Diagnosis & Assessment.
	MLS	12.15 to 1.15	Aids & Appliances for VIC
		1.15 to 2.15	LUNCH
	NKS	2.15 to 3.15	Plus Curriculum
		3.15 to 3.30	TEA
	UNK	3.30 to 4.30	Curriculum Adjustment in integrated set up.

Date	Resource Person	Time	Topic
7.11.91	SKG	9.00 to 10.00	Concept of Hearing Impaired.
	SPA	10.00 to 11.00	Classification & Roles of Community .
		11.00 to 11.15	TEA
	Dr.S.D.	11.15 to 12.15	Identification.
	MLS	12.15 to 1.15	Spl.Techniques for Teaching HH.
		1.15 to 2.15	LUNCH
	UNK	2.15 to 3.15	Aids & Equipments for HH.
		3.15 to 3.30	TEA
	NKS	3.30 to 4.30	Role of Resource Teaching in integrated setting.
	SKG	4.30 to 5.30	Preparation of Teaching Aids.
8.11.91	SKG	9.00 to 10.00AM	Concept of Orthopaedic Handicap.
	UNK	10.00 to 11.00	Assistive & Adaptive Equipment for OH.
		11.00 to 11.15	TEA
	MLS	11.15 to 12.15	Educating OH & Architectural Barriers.
	SKG/SPA	12.15 to 1.15	Group Discussion/ Assignments.
		1.15 to 1.45	LUNCH
	NKS	1.45 to 2.45	Concept of Resource Programme.
	Dr.S.D.	2.45 to 3.45	Role of Family, Community & Prof orgns.
		3.45 to 5.00PM	Valedictory/T.A./D.A., Tea & Snacks/Etc.

BASIC CONCEPTS

Dr.S.K.Goel,
Reader in Spl.Edn.,
R.C.E.,Bhubaneswar.

1. CONCEPT OF SPECIAL EDUCATION

- Special Education is individually planned instruction designed to the unique characteristics of children who have needs that cannot be met by the standard school curriculum.
- The term most often associated with special education is "exceptional children". Exceptional children are those children who have physical, mental, behavioural, or sensory characteristics that differ from the majority of children such that they require special education and related services to develop to their maximum capacity. The category includes children with communication disorders, hearing disorders, visual impairments, physical disabilities, mental retardation, learning disabilities, behaviour disorders, multiple handicaps, high intelligence and unique talents.
- Although the use of varying terminology is quite common in special education, there are technical differences in meaning among a number of terms. Impairment refers to diseased or defective tissue. For example, lack of Oxygen at birth may cause brain damage or neurological impairment that will result in cerebral palsy.

Disability refers to the reduction of function, or the absence, of a particular body part or organ. A person who has an arm or leg missing has a physical disability. Similarly, someone who cannot control the muscles required for speech has a disability in communication. The terms "disorder" and "dysfunction" are frequently used as synonyms for disability.

Handicap refers to the problems that impaired or disabled people have when interacting with their environment. A person who is confined to a wheelchair put it this way: "Sure, I have a disability but I am not handicapped - until I try to get into a building that has a flight of steps and revolving door as its only entrance". A person may be handicapped in one situation and not in another.

- In the past the handicapped have sometimes been cared for and sometimes abused and persecuted.
- Litigation has resulted in court determinations that affirm the right of all handicapped children to a publicly supported education.
- Section 504 of the Rehabilitation Act of 1973 prohibits discrimination against the handicapped in employment, accessibility to facilities, education, and other social services. It is essentially civil rights legislation for the handicapped.
- PL 94-142 guarantees a free and appropriate public education to all handicapped children.
- The National Policy on Education, 1986 (Govt. of India, MHRD) lays special emphasis on the removal of disparities and to equalise educational opportunity by attending to the specific needs of those who have been denied equality so far. The objective should be to integrate the physically and mentally handicapped with the general community as equal partners, to prepare them for normal growth and to enable them to face life with courage and confidence. The Programme

- of Action for the implementation of NPE has stressed the need to strengthen the scheme of Integrated Education for Disabled Children (IEDC) to realize the goal of Universalisation of Primary Education (UPE) for this group of children.
- No child is ineducable. Every child has a fundamental right to educate oneself, the right to an occupation or profession, the right to maintain health and physical well-being, the right to independent living, and the right to love.
- The major issues in special education are Labelling, Normalization, Assessment, Individualized Instruction, Cultural Diversity, child Abuse and Neglect, and Access to the community.
- The assignment of labels to exceptional children can lead to improper practices and should be avoided whenever possible.
- Normalization can be defined as the philosophy that all handicapped people should have the opportunity to obtain an existence as close to the normal as possible; making available to them patterns and conditions of everyday life which are as close as possible to the norms and patterns of the mainstream of society (Nirje, 1969).
- Normalization has helped in greater integration of handicapped with non-handicapped and also in promotion of two practices, deinstitutionalization and mainstreaming.
- Deinstitutionalization refers to the movement to eliminate large institutions, particularly those for the retarded, Wolfenberger (1972)

proposed that long-term, total life care institutions be replaced by small, community-based group homes. These group homes are being encouraged by many parents and special education professionals.

- The second aspect of normalization that related to special education is a reflection of a provision of PL 94-142. The provision stipulates that handicapped children be educated in "the least restrictive environment". This means that handicapped children are to be educated with nonhandicapped children wherever possible, in as nearly normal an environment as possible. This process is known as mainstreaming.
- Assessment of most exceptional children requires the use of formal and informal techniques, standardized and teacher-made tests, norms- and criterion-referenced tests. Exceptional children are assessed to identify those who need special education programmes and to determine where instruction should be begun. Assessment is a difficult process that often yields imprecise results.
- Exceptional children are educated in a variety of environments, including regular classrooms, resource rooms, special schools, residential facilities, homes and hospitals. It is best to place the child in the least restrictive educational environment that meets the child's needs.
- An individualized educational programme (IEP) must be developed for every exceptional child receiving special education services. It is the foundation on which the child's education is built.

- Special educators should be particularly sensitive to the unique characteristics and needs of exceptional children from minority cultures. They should be certain that the assessment is not biased by conflicts between the criterion they establish and the culture of the child being tested.
- There are many abused and neglected children in special education programmes. Teachers need to be particularly alert for signs of child abuse and neglect: the physical or mental injury, sexual abuse, negligent treatment or maltreatment of a child under the age of 18.
- Efforts are being intensified to remove architectural barriers that prevent people with physical disabilities from gaining access to community facilities.

2. CONCEPT OF MENTAL RETARDATION

- Mental retardation is impaired mental ability. A retarded child learns more slowly; at maturity his capacity to understand will be less than normal. He finds difficulty in learning, social adjustment and economic productivity.
- Mental retardation respects neither class nor race. It occurs in families rich and poor, learned and uneducated. No family is immune. Children from deprived backgrounds can become retarded because of lack of early opportunity for intellectual growth. The brutalities of a

life of extreme poverty may affect the child's mental growth.

- Mental retardation is not primarily a medical problem. It is an educational, psychological and social problem. The treatment for the mentally retarded is stimulation and education from the earliest possible moment to develop their limited potential to the utmost. Mental ability grows when nourished by love and care. Minds can also deteriorate from neglect.
- Mental retardation should not be confused with mental illness. As it is not an illness, the question of cure does not arise. It is a life-long condition. However, there are conditions sometimes related to mental retardation which can be improved or cured. For example, deafness, poor vision, emotional disturbance or poor living conditions may sometimes make a child appear retarded. Early detection can help to lessen the degree of handicap.
- Sometimes mental and physical handicap may go together but certainly not always. There are cases of multiple disability when a child suffers from spasticity, or deafness or impaired sight and seizures as well as being retarded.
- Careful diagnosis is essential to ascertain that the child is not suffering from other handicaps which mask normal intellectual potential. This can sometimes be incorrectly diagnosed as mental retardation. Early and careful identification of the truly retarded can often minimise the child's disabilities and improve his functional capacity.

- To be diagnosed as mentally retarded, a person must be significantly subaverage in both intelligence and adaptive behaviour.
- IQ scores should be considered in diagnosing mental retardation, but they are of little use in teaching a retarded child.
- A child's level of adaptive behaviour is determined by comparing his performance to the standards of independence and social responsibility that are expected for his age level and cultural group. Adaptive behaviour is very difficult to measure.
- Mental retardation is defined as significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behaviour and manifested during the developmental period (Grossman, 1977, p 5).
- Classification system related to etiology and clinical type are of little use in education. Genetic irregularities, problems during pregnancy, problems at birth, problems after birth, and psychosocial factors can cause mental retardation, but the causes of most cases are unknown. The type of environment a child has during the first five years of life, the formative years, can make a considerable difference in its intelligence. There are, therefore, a great many causes. Even when we say how mental retardation is caused, it is rarely possible to determine why.

- The classification system based on severity of systems, which identifies children as mildly retarded (Educable Mentally Retarded), moderately retarded (Trainable Mentally Retarded), and Severely/Profoundly retarded, is the system of greatest utility. Of the retarded only 5 percent have severe/profound degree of retardation. They are incapable of guarding themselves against common physical dangers and need life-long nursing care. About 20 percent are moderately retarded and can be taught to care for themselves and do simple routine tasks under supervision. With early and proper teaching, with suitable Schools and vocational training, the mildly retarded, who constitute 75 percent of the retarded population, can learn to be fairly self-supporting adults. These EMR children with good adaptive behaviour skills can often be successfully integrated into regular classes. It must be stressed that rigid classifications cannot be made. Children should be classified into diagnostic categories only when classification will lead to the development of an educational programme that will meet their needs.

- The retarded benefit from all types of attention and training. Even the more severely retarded can improve. Among the mildly retarded, the majority can learn to read and write, hold jobs and lead useful lives. Physical activity satisfies many of their needs. Physical fitness increases the child's ability to learn. Children can be taught to take part in sports, play musical instruments, draw, paint, sculpt and dance. Some become competent athletes. With vocational training and rehabilitation, adult retarded can work competently in sheltered

workshops or in open employment. Many learn to handle money, use public transport and achieve a fair degree of independence.

- TMR children are usually educated in special classes. Research into growth and development and into learning processes also greatly assist those working with the moderately retarded to help them develop as fully as possible.
- It is best to regard retarded people as "developing individuals" who are capable of growth and development that can lead to favourable changes in their behaviour. Living arrangements such as group homes and alternative living units located in the local community are preferable to large residential institutions. Parents of the mentally handicapped persons should be guided in forming self-help groups. Professionals should work closely with the families of the mentally handicapped persons. Whenever needed they visit homes, Schools and work places to offer help.
- The mentally retarded have many things in common with the normal people. But there are also characteristics which are different. Some of the salient features of mental retardation are
(i) Slow reaction, (ii) Absence of clarity,
(iii) Inability to learn fast, (iv) Inability to understand quickly, (v) Inability to decide
(vi) Inability to remember (vii) Short temper,
(viii) Lack of coordination (ix) Lack of concentration
(x) Delay in development.
- In many cases, mental retardation can be prevented with proper care. Research into causes may lead to

prevention. This is the hope for the future.
In order to prevent mental retardation, here are some precautions to be taken during pregnancy, during delivery and after the birth of the child.

- a) The pregnant woman must have a regular health check up by a qualified doctor.
- b) The pregnant woman must eat a balanced diet including milk, cereals, rice, wheat, green and leafy vegetables, peas, beans, etc. The non-vegetarian food like fish, meat, chicken, eggs, etc. may be eaten if she likes.
- c) If the pregnancy is not wanted and an abortion is planned, it should be done only in a hospital by a qualified doctor.
- d) The pregnant woman must take vaccination against tetanus.
- e) Carrying heavy loads, climbing trees/narrow stools/ladders, walking on slippery ground, etc. during pregnancy should be avoided to prevent accidents.
- f) Medicines should be taken by the pregnant woman only if prescribed by a qualified doctor.
- g) Delivery must be conducted by a trained person in the hospital.
- h) If the baby does not cry immediately after birth or turns blue, proper breathing must be ensured and Oxygen given immediately.

- i) If abnormalities such as big head or the baby looking yellow are noticed, a doctor must be consulted immediately.
- j) During the first year the child should be immunized against diphtheria, whooping cough, polio, tetanus and tuberculosis.
- k) A doctor must be consulted immediately if the child develops fits because uncontrolled fits may lead to mental retardation. Drugs prescribed by the doctor must be given regularly in order to bring fits under control.
- l) High fever of 104°F or above in a child can cause brain damage. Efforts must be made to bring down high fever immediately. After uncovering the body of the child, wet pieces of cloth must be placed on the forehead, body, arms and legs, Change the wet pieces of cloth a number of times. Open all the windows and doors. Use fan also in the room where the child is lying. The child should be given plenty of water with sugar or jaggery to drink. The medicines prescribed by doctor may be given. Do not wrap the child in warm clothing or blanket.
- m) Contaminated food should be avoided during epidemics like brain fever and cholera. Children should not be allowed to eat on the roadside. They should be given fresh food and boiled water.
- n) Head injury due to accidents can cause brain damage. Accidents must be avoided.
- o) Child bearing by a woman under 18 years and over 35 years of age should be avoided.

- p) Some defects can be transmitted from one generation to another. Marriages among blood relatives should be avoided, especially if there is a history of mental retardation in the family.

CONCEPT OF VISUAL IMPAIRMENT

- Normal or unimpaired vision has four basic components: (a) the object to be viewed, (b) light that reflects from the object, (c) an intact visual organ (the eye), and (d) the occipital lobes of the brain, where visual stimuli are interpreted and "Seeing" takes place. The basic function of eye is to collect visual information from the environment and transmit it to the brain.
- The leading causes of visual impairment are cataracts, refractive problems, glaucoma, retinal disorders, retrolental fibroplasia, maternal rubella, retinal and optic nerve disorders, etc.
- Visually impaired children are classified as either blind or partially seeing.
- Definitions of Visual impairment based on visual acuity are used primarily for legal and economic purposes, and for the allocation of funds/facilities/concessions from the Government for the purchase of educational materials, etc.
- Visual acuity is the ability to clearly distinguish forms or discriminate details at a specified distance. Visual acuity is measured

by having children read letters, numbers or other symbols from a snellen chart 20 feet away. Snellen chart is the most common instrument for screening visual impairments in children. Field of vision is measured in terms of visual arc:

- A person with normal eye sight is said to have 20/20 vision. With correction, a legally blind child has visual acuity of 20/200. A person who has received the best optical correction and can see at 20 feet in the best eye what a person with normal vision can see at 200 feet is considered legally blind. If a person's field of vision is 20 degrees or less, then he/she is considered legally blind. A partially seeing child has visual acuity between 20/200 and 20/70.
- Educational definitions of visual impairment are based on the media through which the child learns rather than on visual acuity.
- Most visually impaired children are not totally blind. Approximately two-thirds of all visually impaired children have some remaining vision. There are about 9 million blind and 45 million visually impaired in India. Besides, about one million cases are added every year. A majority of cases of blindness are either preventable or curable.
- The physical characteristics of visually impaired children other than vision are the same as those of children who are not visually impaired.
- The intellectual development of children is not directly affected by visual impairment or blindness.

However, IQs alone are an inadequate measure of a child's ability to learn. Most experts acknowledge that a child's ability to learn is significantly affected by two factors: intelligence and concept development.

- Visually impaired children tend to lag behind their seeing peers in School achievement.
- The most widely accepted view is that the social and emotional problems of VIC are the result of the attitudes and reactions of persons with normal vision, and not the result of the loss of vision itself.
- Once a child has been placed in the most suitable educational environment, the educator must consider the curriculum that will best meet her needs.
- Children with visual problems are usually taught the same sequence of subjects as children with normal vision, because they need to master the same basic skills. However, unlike sighted children they will need to be taught special skills in addition, such as Orientation and Mobility, Daily Living Skills, Braille Reading and Writing, etc. Although the responsibility for implementing the total curriculum plan lies with the regular teacher, the assistance of a specially trained teacher will be necessary to teach these special skills to VIC.
- The media through which VIC obtain information are tactile,, visual, and auditory.

- Those involved in educational planning should remain flexible in their approach to placement. It is important to remember that the most appropriate, least restrictive environment for VIC is the one in which they would normally be enrolled if they were not visually impaired. They should be educated to the greatest extent possible with sighted children.

4. CONCEPT OF SPEECH AND HEARING HANDICAP

- Communication is disordered when it deviates from accepted norms such that it calls attention to itself, interferes with the message, or distress the speaker or listener.
- Speech results from many organs of the body working cooperatively to produce sound.
- The three major types of sounds in our language are vowels, diphthongs, and consonants.
- Speech and language are developmental processes acquired over time.
- Language disorders are the most complex and most serious of all communication problems.
- Most speech disorders involve problems with articulation, voice, or fluency.
- Speech language pathologists are the professionals to deal with communication disorders.

- The classroom teacher has an important role in the early identification of communication disorders. The following checklist summarizes behaviours and characteristics of children with speech disorders.
 - a) Does the child have any observable deformity of the speech organs ?
 - b) Does the child make frequent natural breaks while speaking words and phrases ?
 - c) Does the child frequently mispronounce despite corrective efforts made by the teacher ?
 - d) Does the child hesitate in participating in oral group activities ?
- Gains made in therapy sessions must be reinforced in the home and classroom for speech therapy to be effective.
- A child listens a lot before he can speak well. Our ears are the doorways to the world of communication. It is the listening child which learns to say his first words by the age of 12 months.
- Our ear is a delicate organ. A damage or injury to any part of the ear may lead to "deafness". One of the common causes of deafness is persistent ear infection and ear discharge. If neglected, it may lead to permanent deafness. It is therefore essential that we pay special attention to our

ear and its hygiene. Prevention is better than cure. Proper hygiene and care of the ears at the right time will help in preventing deafness.

- One of the most serious consequences of hearing loss is that it can hamper the development of speech and language in young children.
- Hearing losses are due to conductive, sensori-neural, mixed, functional and central auditory problems. The conductive loss, which is usually caused by middle ear infections, is the easiest to correct.
- The professionals who evaluate hearing by means of audiometric testing are called audiologists.
- A hearing loss of between 20 and 40 decibels is considered mild. A loss of between 40 and 60 decibels is considered moderate. A 60 to 80 decibel loss is considered severe and losses of more than 80 decibels are considered profound.
- Hearing loss can affect speech and language development, and educational, vocational, social, and emotional adjustment.
- Depending upon whether hearing loss is mild, moderate, severe or profound, the hearing aid is to be fitted. Hearing aids make sound louder but do not make sounds clearer. Auditory training is important for listening.

- For educational purposes, children with hearing disorders are classified as either hard of hearing or deaf.
- The philosophy of total communication makes use of both oral and manual procedures to teach deaf children.
- Children with severe hearing impairment are best educated in a variety of settings, depending on the severity of their problem. These settings include the residential school, day school, special class, and resource room.
- Regular class teachers should be able to recognize signs that may indicate hearing disorders so that they can refer children for hearing evaluations. Teachers can help keep children with hearing disorders in the regular classroom in many ways. A classroom teacher should watch for the following signs of possible hearing loss.
 - i) Does your child have problems paying attention in school ?
 - ii) Does your child favour one ear for listening purposes ?
 - iii) Does he have problems to hear when you speak to him from behind ?
 - iv) Do you think your child can hear, but only when he wants to hear ?

- v) Do you think your child speaks too loudly or too softly ?
- vi) Does he exhibit voice problem and mispronunciation ?
- vii) Does your child tune the Radio/T.V. too loud ?
- viii) Does your child answer questions irrelevantly ?
- ix) Does your child keep away from agemates ?
- x) Is your child unable to respond when you call from the other room ?
- xi) Does your child understand only after few repetitions ?
- xii) Does the child focus on the speaker's face while listening to and understanding speech ?
- xiii) Does the child ask for help from fellow students in taking notes when the teacher gives verbal explanation of the lessons in the classroom ?
- xiv) Does the child complain of frequent earaches or eye discharge ?
- xv) Does the child scratch his ear frequently?
- xvi) Does the child have any observable deformity of the ear ?

- If one or more of these symptoms are present in your child, you need to observe the child and see if the behaviour is consistent in similar situations. If the behaviour is found consistent your child needs professional help from an audiologist.

5. CONCEPT OF LEARNING DISABILITIES

- Learning Disabled (LD) have difficulties in learning to read, write, speak, comprehend even, in the broadest sense, to find places on a map, tell time, or ride a bicycle. It is generally agreed that the LD child does not perform at the level he should be able to.
- The basic problem in learning-disabled children is an incapacity to learn through normal and conventional channels.
- The LD definition adopted by Federal Legislation (1977) is given as under: "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing or motor handicaps or mental retardation, or of environmental, cultural or economic disadvantage. The above definition generated a lot of controversy.

- National Joint Committee for Learning Disabilities (1981) gave the following definition of LD and there is unanimous agreement on this definition at international level:

" Learning Disabilities" is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions (e.g. sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (e.g. cultural differences, insufficient/inappropriate instruction, psychogenic factors), it is not the direct result of those conditions or influences.

- From a psychometric standpoint, learning disability can be operationally defined as a significant discrepancy between a child's actual level of achievement and the achievement expected of a child at his/her chronological age.
- Learning disabilities can be identified by intelligence tests, achievement tests and tests of specific learning modalities.

- The decision to diagnose a child as a disabled learner is made by a transdisciplinary team.
- Many children who are diagnosed as having minimal brain dysfunction respond favourably to drug therapy; the continued use of drugs with children, however, may produce long-term side effects and drug therapy is currently a highly controversial issue.
- Our present technology does not enable us to differentiate a child with a learning disability from one whose learning difficulties result from mild mental retardation, emotional disturbance or cultural deprivation. Yet in order to provide these handicapped children with special services they require, we must label them and place them in categorical programmes.
- The causes of learning disabilities are very poorly understood, but they could include such disparate factors as maldevelopment of the brain and poor teaching.
- There are three primary objections to labelling a child as learning disabled:
 - a) Labels do not really define discrete groups of individuals; they do not account for overlap between categories.
 - b) Little evidence exists to support the use of one educational treatment for any particular label.

- c) Biased tests can cause mislabeling.
- The main characteristics of L D children are:
 - a) Attention difficulty
 - b) Perceptual problems
 - c) Memory problems
 - d) Language deficits
 - e) Poor motivation/attitude
 - f) Poor sound/Symbol association
 - g) Transfer difficulties.
- In order to be called a "characteristic2 difficulties that children with learning disabilities have must be
 - a) observed consistently over time
 - b) resistant to simple remedial teaching methods
 - c) accompanied by a significant gap between achievement and ability.
- Perceptual motor disabilities include difficulties with visual perception and/or difficulties in the coordination of visual perception with motor behaviour.
- Psycholinguistic learning disabilities involve difficulties in the area of language and the cognitive processes upon which language is based.
- One of the unfortunate consequences of learning disabilities is the potential for disruption of normal social and emotional development; the term "emotional overlay" is used to describe the adverse emotional and behavioural problems that may develop as a function of a learning disorder.

- Learning disabilities and behaviour disorders may occur in part because our Schools are unable to provide enough high-quality individual instruction.
- The current concept of learning disabilities reflects a long history of different interpretations of how persons learn.
- In contemporary services for the learning disabled, the goal is to provide intense services within the least restrictive environment possible, using a transdisciplinary team approach.
- The regular classroom teacher should become skilled through inservice training in managing learning disabilities within the mainstream of the school.
- A variety of behaviour modification techniques have been shown to be effective in altering behaviours that are incompatible with learning in the classroom.
- Although a consensus regarding the most effective forms of educational intervention is still lacking, individualized instruction with the learning-disabled child frequently produces rapid improvement in areas of academic deficiency.
- In the next few decades there are likely to be major shifts in the conceptualization of learning disabilities. The field is still very young and has not as yet had ample opportunity to examine itself. Education clearly needs a

period of gestation that allows for innovative programming and experimentation with new procedures.

6. CONCEPT OF ORTHOPAEDIC HANDICAP

- Orthopaedically handicapped are those whose physical or health problems result in an impairment of normal interaction with society to the extent that specialized services and programmes are required for them.
- Children with orthopaedic handicaps can be grouped into two types-the mild and severe.
- The orthopaedic impairment can interfere with the normal functioning of the bones, joints, muscles to such an extent that special arrangements are required to accommodate him in regular classes. Some of the orthopaedic impairments are so severe that the children require hospitalization either temporarily or permanently. Children who are temporarily hospitalized can be integrated but those who are permanently hospitalized need hospital bound programmes.
- We will discuss children who are grouped according to their abilities to function in a particular area, and children who are grouped according to medical diagnosis. The functional categories are ambulation, which requires the child's ability to move from place to place, and vitality, which refers to the child's health and ability to sustain life. In the medical category, we will discuss convulsive disorders.

- Areas of the body are frequently designated with prefixes, whereas suffixes are used to designate conditions of the body. For example, the prefix "hemi" refers to one side of the body, whereas the suffix "plegia" refers to paralysis or the inability to move. Thus, the term "hemiplegia" refers to the paralysis of one side of the body.
- Cerebral palsy (CP) is caused by damage to the brain. It is characterized by impaired motor coordination. The other disorders often associated with CP are communication disorders, sensory disorders, convulsive disorders, intellectual deficits, etc., There are several types of cerebral palsy, including spastic, athetoid, ataxia, rigidit., tremor, and mixed.
- The other disorders that affect ambulation are muscular dystrophy, spinal muscular atrophy, poliomyelitis, arthrogryphosis, arthritis, osteogenesis imperfecta, spinal cord injuries and other musculoskeletal disorders. Muscular dystrophy is a progressive weakening and degeneration of the voluntary muscles. Spinal muscular atrophy affects the spinal cord and results in progressive degeneration of the motor nerve cells. Poliomyelitis (infantile paralysis) is a viral infection that affects or destroys the cells in the spinal cord. When these cells are destroyed, the muscles that they serve eventually die or become paralyzed. The paralysis may affect the entire body or just parts of the body. Many people with polio are bedridden, confined to

wheelchairs, or dependent on braces and crutches for ambulation. Spina bifida is a congenital defect caused by the failure of the bones of the spine to grow together completely. Osteogenesis imperfecta is also known as brittle bone disease. Arthrogryphosis is a congenital disorder characterized by stiff joints and weak muscles. The first signs of the disease Arthritis are general fatigue, stiffness and aching of the joints as they swell and become tender. The five common forms of arthritis are: rheumatoid, osteoarthritis, ankylosing spondylitis, rheumatic fever, and gout.

- A problem in one part of the body frequently causes problems in another part. Children who have spina bifida, muscular disorders, or other disorders frequently have back problems as well. Muscles that pull too hard or that are unequally balanced can cause such disorders as scoliosis, lordosis, and kyphosis. Inadequate muscle tension sometimes results in the complete collapse of the skeletal system.
- A club foot is a disorder that can appear by itself or in conjunction with another problem. Children with this disorder are born with one or both feet turned down and in.
- Amputation is another important disability. It can be partial or complete. Most amputations are necessary because of accidents but some are required by life-threatening physiological disorders and diseases.

- Limbs may also be missing as the result of disruptions in the early fetal development of the limbs. This sometimes occurs randomly but it can also be caused by drugs such as thalidomide if taken by the pregnant woman particularly during the first trimester of pregnancy.
- Some of the disabilities that can affect the vitality of children are congenital heart defects, cystic fibrosis, diabetes, and asthma. All children with these types of disorders will need special assistance from a primary care worker or teacher, and special educational, social and vocational training as well.
- Epilepsy and seizures are categorized under the general heading of convulsive disorders. Epilepsy is caused by uncontrolled electrical discharges in the brain and can usually be controlled with medication. The three primary types of seizures that result from epilepsy are grand mal, petit mal, and psychomotor seizures.
- Many types of assistive and adaptive equipment have been developed to help physically disabled children in their day-to-day existence, travel, adaptive to their environment, and communication. Prosthetic devices such as artificial arms and legs are used to replace missing body parts. Orthotic devices are attachments, such as a leg brace or a splint, that assist a body function.
- Standards have been developed to aid in the elimination of the architectural barriers encountered by the physically disabled.

- The great majority of physically disabled children can be educated in regular classrooms with the use of assistive equipment and special teaching aids. Before recommending the placement of orthopaedically handicapped children in the regular classroom, it is necessary to consider that their medical, travel, transfer and lifting, self-care, and positioning needs can all be appropriately met in the regular classroom.

CARE EDUCATION AND MANAGEMENT OF SPECIAL CHILDREN

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WHO ARE SPECIAL CHILDREN ?

Perhaps there are as many answers to this question as there are special children. In a humanitarian and philosophical sense, all children are special. However, in the present context, we are concerned with special kinds of children who are significantly different from other children in some important dimension of human functioning. These special children are those for whom the presence of a physical, psychological, cognitive, or social factor makes difficult the realization of their needs and full potential. For these children special care and skilled intervention are needed in order to help them reach their potential.

Estimates of the numbers of children who experience various types of special conditions vary widely. Although no single government agency is charged with the responsibility of keeping accurate statistics for all categories of special childhood, it is possible to gain a general estimate of the numbers of children who experience special conditions. Many of the special conditions of childhood are experienced by large numbers of children and require the services of various skilled professionals.

Two major factors distinguish childhood as a unique period in the human life cycle: (a) rapid developmental changes at both the physiological and psychological levels, and (b) dependence upon responsible adult caretakers in order to ensure the integrity of the child's development. The special child has a right to as normal a development as possible and the opportunity to grow to one's fullest human potential. In recent years there have been several attempts to provide sophisticated care to help special children develop to their full potential. Current efforts towards helping the special child have been made possible by two major circumstances: (a) a changing social philosophy that emphasizes the value of the individual and the rights of children and (b) the increasing sophistication of various treatment approaches that has created the hope

that help is always possible. In order to understand the care and management of the special child in contemporary society, it can be safely assumed that special children fared poorly in most previous societies. Genuine care for special children requires a social sensitivity toward them and history bears testimony to the fact that we are slowly acquiring social conscience towards the needs and the rights of the special children. The rights of children in contemporary society have been refined by three major factors: decisions of the courts, enactment of social legislation by Congress, and policy statements by powerful national and international organizations. The special children typically require the help of a team of professionals, each having a unique expertise. The various professional services are required in terms of five major areas associated with special children: (a) medical/paramedical, (b) social / legal, (c) educational, (d) psychological, and (e) special modalities.

HOW TO HELP SPECIAL CHILDREN ?

The helping process is described in terms of intervention therapy, management and care, rehabilitation, remediation, and special education. The major forms of medical intervention are medication and surgical procedures. Psychotherapy is the planned management of an interpersonal process intended to relieve the child's initial distress and to enhance developmental processes. Psychotherapy with children includes individual psychotherapy (both verbal and play therapy), family psychotherapy, and group psychotherapy. Behaviour therapy is the application of scientifically derived principles of experimental and social psychology to the alleviation of human problems. Behaviour therapies make use of a wide variety of reinforcement or conditioning procedures. Special education is designed to provide specific appropriate facilities, specialized methods and materials, and specially trained teachers for children with a wide range of developmental problems. Special education includes both special placement and mainstream education. Those forms of intervention that involve the manipulation of the child's home environment are called social intervention. The concept of the wanted child is a critical aspect in foster placement, whereas milieu therapy is a key factor in residential placement. The major forms of intervention available to the special child include medical intervention, psychotherapy,

behaviour therapy, educational intervention or special education, and social intervention or placement.

Management and care are important forms of helping. These terms typically refer to processes of coordinating and monitoring various aspects of intervention. For example, when a child is said to be under a doctor's care, it means that a physician is coordinating treatment procedures. "Management" is a particularly important concept in residential and hospital settings, where all phases of the environment and the treatment process are closely supervised. In this sense, management includes planning, directing, implementing, coordinating, and evaluating the activities of various helping agents involved with a patient. Recently, parental management of the behaviour of special children is also being recognized as an important part of the helping process. There is now a growing recognition that management procedures implemented by both parents and professionals are key components of the helping process.

HOW TO EDUCATE SPECIAL CHILDREN ?

Special education is individually planned instruction designed to respond to the unique characteristics of children who have needs that cannot be met by the standard school curriculum. Special children are assessed to identify those who need special education programmes and to determine where instruction should be begun. Special children are educated in a variety of environments, including regular classrooms, resource rooms, special schools, residential facilities, homes, and hospitals. It is best to place the child in the least restrictive educational environment that meets the child's needs. An individualized educational programme must be developed for every special child who is enrolled in an educational setting. Special educators should be particularly sensitive to the unique characteristics and needs of special children. There are many abused and neglected children in special education programmes. Teachers need to be particularly alert for signs of child abuse and neglect. Efforts need to be intensified to remove architectural barriers that prevent people with physical disabilities from gaining access to community facilities.

Many research studies have demonstrated the importance of providing early education for special children. In fact, those special children who do not receive early education may actually decline in their development. The pre school special child has the same needs, wants, and problems as all other children, but he/she also has additional difficulties to overcome. Intelligence is not fixed but can be modified by environment. Special children go through the same developmental stages as other children. Developmental norms are useful in screening, assessing, and developing curricula for young special children. The areas of development of most importance in young special children are gross motor, fine motor, perception, conceptual, social-emotional, communication, and self-help. State and local officials are involved in casefinding, child find, and early identification projects. The purpose of these projects is to identify young handicapped children who need services. Screening is the testing of a large number of children to identify those who need additional in-depth diagnosis and assessment; these activities can result in the provision of special services. Services are most frequently delivered to young handicapped children in centrally located service-delivery centres, in the children's homes, or in both the centres and the children's homes. There is a trend to develop and offer infant intervention projects for very young children to reduce the effects of disabling conditions on later development. It is utmost essential to include parents in the education programmes for their young handicapped children.

HOW TO INVOLVE PARENTS OF SPECIAL CHILDREN ?

Parents and special educators have been working together in the recent years to meet the challenges presented by special children. Parents are becoming increasingly involved in planning and carrying out their children's educational programmes. Although reactions of parents to the birth of a handicapped child vary greatly, they may experience periods of shock, denial, guilt, fear, overprotectiveness, overt rejection, before reaching the stage of acceptance. The attitudes of parents can improve or adversely affect the behaviour of their handicapped children. The siblings of handicapped children largely

adopt the attitudes of their parents towards the handicapped child. The parents of handicapped children need a great deal of information about such subjects as diagnosis, treatment, management, and support services. The relationship between parents and professionals concerned with handicapped children is gradually improving. Successful relationship depends on mutual trust and understanding. Parents can assist in the identification, assessment, and programming of their children and in the implementation and evaluation of their children's programmes. The parents of special children have played an important role in the initiation and development of special education programmes. They have supported every major effort to develop services.

In spite of the many contributions of parents, they have frequently been excluded from many programmes meant for their children. Education has mostly been left to the professionals. Recently, however, parents have begun to assume a broader role in the educational process. Educators have realised that parents must be involved in all the important programmes for effective implementation. Parents have the legal right to be involved in all decisions regarding the education of their handicapped children. They also have the protection of due process if they are dissatisfied with the educational programme that has been provided.

There are several considerations involved in placing children in the regular classroom, special class, hospital setting, institution, or other administrative arrangement. The educator must meet certain legal requirements, develop parent organizations and training programmes, and develop a plan for conducting parent conferences. Parent programmes are generally designed to provide parents with social and emotional support. Parent programmes also provide a forum for the exchange of information. They can involve scheduling guest speakers, maintaining a lending library, or publishing a newsletter. A major goal of all parent programmes should be to improve the interactions between parents and their handicapped child. Professionals should be candid with parents and communicate in a non-authoritarian manner. Parents should be treated with

consideration and sensitivity. Many parents in India also feel like their western counterparts that there should be a protection of due process if they are dissatisfied with diagnostic, educational or any other programme provided for their handicapped children in schools.

MENTAL RETARDATION: MEDICAL ASPECTS -
WITH REFERENCE TO INCIDENCE, CAUSATION
AND PREVENTION

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In countries with a high birth rate, the number of handicapped children increases rapidly. In India three children with Down Syndrome are born every hour. The problems of developing medical, social and educational systems to meet the needs of new generations of normal and handicapped children are enormous. One of the aims of this paper is to look at the various clinical factors that account for incidence of mental retardation and the preventive measures that can be taken up in a planned way and providing treatment after early detection.

It is not practicable to consider a comprehensive list of causes of mental retardation. There are too many and most are extremely rare. Data are not available for most causes, to give precise figures for incidence or prevalence at birth in different communities related to factors causing variation. It is indeed here therefore, to illustrate the general point by discussing only the manner in which some of the most important causes - of very different character are subject to variability.

Not all are now so relevant, in some cases, such as PKU preventive programmes in many communities have virtually eradicated retardation.

The causes may be classified as having clinical origin or socio-cultural basis. However, in this paper the clinical orientation has been focussed which includes chromosomal anomalies, neural tube defects and dietary factors, Rubella Syndrome, congenital syphilis, fetal alcohol syndrome, congenital hypothyroidism, perinatal damage, encephalitis and encephalopathy, neonatal jaundice, use of traditional herbs, exposure to naphthalene moth balls and enzyme deficiencies.

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GENETIC IRREGULARITIES:

A review of some of the basic concepts of genetics is in order before we proceed to our discussion of Mental retardation caused by genetic problems. Genes are the basic units of heredity. They direct and control the processes of growth and development that occur in each of our cells. A defect in a gene can interrupt the biochemical processes that occur in the cells, which can in turn affect certain physical and mental characteristics.

The genes are located in chromosomes. At the moment of conception, twenty-three chromosomes from the male sperm cell and twenty-three from the female egg cell are passed on to form a new cell of 46 chromosomes, which then begins to divide and ultimately forms a new human being. When the chromosomes pair up at conception, the genes from both parents are matched with one another. A dominant gene generally determines a characteristic, regardless of the gene that is matched up with on its paired chromosome. A recessive gene determines a characteristic only when it is matched up with a similar recessive gene on its paired chromosome. If two recessive genes do not match up, the offspring will not exhibit the trait that they are responsible for.

Dominant gene Defects:

Fortunately, mental retardation due to single defective dominant genes is quite rare. Conditions such as tuberous sclerosis and neurofibromatosis are due to dominant genes that result in severe retardation. It is obvious that severe mental defectiveness due to single dominant gene will be self-limiting because the parents must also be defective. Since most of these severely mentally retarded do not reproduce either because of

sterility or lack of opportunity, the transmission of the defective dominant gene from one generation much more often mental retardation is caused by a single recessive gene. Such defective children typically come of apparently normal parents.

Recessive Gene Defects:

A number of retarded children are born to seemingly normal parents. This is often the result of the inheritance of matching recessive genes from the child's parents. Recessive genes can cause problems in metabolism, endocrine disturbances and cranial anomalies, any of which can result in retardation. However, these conditions are relatively rare. Some of these are:

Phenylketonuria (PKU) is a recessive gene disorder that affects the metabolism of proteins. PKU can be identified in infants by a simple blood test that should be routinely administered shortly after birth. The probability that the disorder will result in retardation can be reduced through a diet low in phenylalanine. PKU is an inborn error of aminoacid metabolism due to homozygosity of a recessive gene.

Galactosemia is another recessive gene disorder, a condition that affects the metabolism of carbohydrates. If the disease is detected before brain damage has occurred, retardation can be prevented with a milk-free diet.

Galactosemia is an inborn error of carbohydrate metabolism inherited as an autosomal recessive trait. Galactose is found in all milk sugar. The infant is unable to convert galactose of milk into glucose due to deficiency of an enzyme. Within a few days of birth the infant develops vomiting, diarrhoea, jaundice followed with enlargement of liver and failure to thrive. Majority of the survivors have mental retardation.

Cretinism, a disorder of the endocrine system, is characterized by lack of the thyroid hormone. Although this condition is sometimes caused by recessive genes, it can also be caused by a diet that is deficient in iodine. Complete absence of the thyroid glands, lethargy, sluggish behaviour, irritability, anemia, constipation and retardation in physical growth are early symptoms of this condition. Early treatment with thyroxin can prevent some of the physical symptoms associated with cretinism, but persons with this disorder are almost always retarded.

Microcephaly is one of the several cranial disorders that can be caused by recessive genes. Microcephalic children are generally short and have small skulls, curved spines and rather severe retardation. This condition can also be caused by nongenetic factors, such as exposure of the mother to massive dosages of X-rays during pregnancy.

Chromosomal Aberrations: Retardation is also caused occasionally by improper cell division, which can result in cells that have an abnormal number of chromosomes or chromosomes that have an abnormal structure. The most common conditions involving chromosomal aberrations is Down's Syndrome. The term "Syndrome" means a constellation or cluster of symptoms. Down's Syndrome used to be called "mongolism", primarily because children with this syndrome have almond-shaped eyes that slightly resemble those of the Mongol race. Down's syndrome children have three numbers of chromosomes No.21 (called trisomy -- 21).

Children with Down's syndrome constitute about 10 percent of the moderately-to-severely retarded population. The risk of having a Down's child is related to the age of the mother. Between the ages of twenty and thirty, the risk is one in 1500; between forty and forty-five, the risk is one in seventy. A test called amniocentesis can be used to determine whether a pregnant woman is carrying a child with Down's syndrome or other chromosomal aberrations.

In this test, a small portion of the amniotic fluid that surrounds the fetus is examined.

PROBLEMS DURING PREGNANCY(Prenatal causes)

The differentiation between cases of mental retardation due to prenatal environmental causes and cases of mental retardation due to hereditary factors is very difficult to make. Both the groups are congenital. Any organ or tissue of the body may be affected but the central nervous system suffers most severely in the congenital condition. Congenital cases are often still-born; others show obvious symptoms at birth but survive for many years; and sometimes symptoms do not appear for weeks, months or even years. Most of the congenital cases are mentally retarded.

A number of factors that can cause retardation can affect a woman during pregnancy. These prenatal factors have the most serious consequences during the first three months of pregnancy, although some factors can endanger the fetus at any time during gestation. Maternal disease such as serious kidney disease or diabetes is one such factor. It can cause a number of complications during pregnancy. Certain drugs, exposure to large doses of radiation, and poor maternal nutrition can also harm the fetus. Prenatal physical trauma is another important factor. It is quite possible that unsuccessful attempts at abortion and accidents to pregnant mother may so injure the fetus so as to lower the child's mental level.

Infections are also a major cause of retardation. Rubella or German measles in the first trimester of pregnancy can have disastrous consequences. Rubella can now be prevented with vaccinations. Syphilis is another infectious disease that can injure the fetus.

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Rh incompatibility can also have serious consequences. A woman with Rh negative blood who is impregnated by an Rh positive male has a chance of producing a fetus with Rh positive blood. When this occurs, the mother's body produces antibodies that attack the fetus as they would attack a foreign substance that has entered the body. Rh-incompatibility rarely affects a first-born child. A vaccine called RhoGam has been developed that prevents Rh factors problems in later pregnancies. In some cases it is necessary to give the child a blood transfusion to eliminate antibodies that are damaging the child's tissues. There is also some evidence that alcohol, LSD, heroine and cigarette smoking can negatively affect the fetus, but a definite link between these drugs and retardation has not been demonstrated. Pregnant women should limit their use of tobacco and alcohol and use only those drugs that are recommended by a physician.

PROBLEMS AT BIRTH (Natal Causes)

A number of problems that can result in retardation can occur during labour and delivery. During birth, the brain can be damaged by too fast a delivery or a prolonged difficult delivery or heavy maternal sedation or prematurity or traumatic birth injury or anoxia. Although there is no direct cause-effect relationship between prematurity and retardation, premature babies are more susceptible to disease and more fragile than full-term babies, and are as a result more susceptible to retardation. Brain damage can be caused by prolonged or difficult labour, by difficult forceps manipulation, by problems related to a mother's small pelvis. Asphyxia, the deprivation of oxygen, may be caused by compression of the umbilical cord or other problems. This is probably the major cause of cerebral palsy.

Treatment for some genetic disorders must begin shortly after birth. Children born to mothers with Rh antigens must be monitored to ensure that high levels of bilirubin do not result in brain damage. The blood sugar levels of infants born to diabetic mothers should be monitored to determine whether the child needs treatment. PKU and galactosemia tests should also be conducted and treatment should be initiated if it is warranted. Surgery may be necessary in case of spina bifida.

Hydrocephaly, a related condition, can also be identified shortly after birth. This condition, which is usually caused by prenatal factors, head injury, tumours, and infections, is characterised by the build up of cerebrospinal fluid in the skull. If untreated, the head will expand, which results in severe brain damage. Surgical procedures have been developed whereby a shunt can be inserted to drain the fluid into the general circulatory system.

PROBLEMS AFTER BIRTH (Postnatal causes)

Mental retardation can also be caused by problems occurring after the child is born, including head injuries, brain tumours, infectious diseases such as meningitis and encephalitis, hunger and malnutrition, and some food additives. Lead and mercury poisoning can also cause mental retardation, as can complications arising from childhood diseases such as whooping cough, chicken pox, and measles.

More than 250 causes of mental retardation have been identified. It's hard to believe, but these causes account for only about 10 percent of the cases of mental retardation. In the remaining 90%, the physical or medical cause of the retardation cannot be pinpointed.

PREVENTIVE MEDICAL MEASURES:

Improvement of prenatal, natal and postnatal care is a recognised cornerstone in all efforts to prevent mental retardation. The chances that mental retardation can be prevented improve every time a cause is identified. Here are a number of preventive medical measures:

1. Vaccination against rubella.
2. Surgical procedures to correct hydrocephaly.
3. Amniocentesis to detect chromosomal aberrations in the fetus.
4. Use of drugs to control the effects of childhood illnesses.
5. Blood transfusion of Rh-factor babies, and revaccination of Rh-sensitized mothers.
6. Laws that prohibit the use of lead-based paint on baby toys and furniture.
7. Dietary treatment of PKU and galactosemia.
8. Improved maternal nutrition and prenatal health care.
9. Biochemical screening tests on blood and urine samples taken from infants help detect the possibility of a brain damage. By feeding these children with a special supplementary diet for a period of 4 to 9 years, their mental retardation can be completely averted.

Educating the public about the causes of MR, enriching the impoverished environments and parental counselling are some of the major challenges facing the medical and para-medical personnel today.

PREVENTION OF MENTAL RETARDATION

A few pathological conditions to date are known to be amenable to preventive measures some of which would be applicable by and large in Indian setting as well for primary prevention.

(a) Avoidance of Late Pregnancy: It has been calculated that if no children were born after maternal age 35, the incidence of Down's syndrome would have been halved. This would imply that the raising of family may be completed around the maternal age of 30 or so with appropriate spacing between one or two children. Parents need to be dissuaded from having children after maternal age of 35.

(b) Genetic Counselling: This is becoming increasingly popular in the western countries. Linked with this is the possibility of pre-natal detection of Down's syndrome through amniocentesis; if the diagnosis is positive, medical termination of pregnancy would be desirable. Similarly, Rubella vaccination might have significant impact in reducing the number of severely handicapped children who would be born.

(c) Immunisation Programme: The increased use of immunisation techniques for common childhood illnesses such as measles, mumps and whooping cough which can have neurological consequences would also have a significant impact in reducing incidence of pathological conditions.

(d) Proper Health Care: Better ante-natal and obstetric care would have an impact on the incidence of mental deficiency. Regular medical check-up with the onset of pregnancy alongwith the provision of milk and other nutrients like multi-vitamins may be made for those who cannot afford themselves, and this would be a national investment in the long run.

(e) Obstetric Complications: Several studies have shown that severe complications of labour and delivery appear to be associated with neurological defects, which in turn may cause mental retardation. Better nutrition of the mother in childhood will diminish these obstetric complications.

(f) Consanguinity: Consanguineous marriages are common in some communities. However, one study by Narayanan et al. (1973) had indicated that parental consanguinity often produces mental retardation in the offspring. Counselling of individuals in certain communities could be started against traditionally sanctioned preferential pattern of marital relationship between close relatives.

(g) Nutrition: Poor nutrition, whether during the reproductive cycle or after birth, can impair intelligence sometimes by causing irreversible effect upon brain growth and behaviour.

(h) Biochemical screening: Some form of screening test for the early detection of phenylketenuria (PKU) is employed in many of the developed countries of the world, and in the majority of states constituting the U.S.A. a test is mandatory by law. The natural history of the disease and the results of treatment with a low phenylalanine diet show that such a test is essential if the diagnosis is to be made before irreversible mental retardation has occurred. The PKU infant develops quite normally in the first few weeks of life and signs of mental retardation are seldom noticed before the age of 6 months, though usually much later. Other symptoms such as irritability, feeding difficulties, eczema or convulsions may result in a medical consultation, but in the past the correct diagnosis has often been overlooked. Very few patients missed by a screening test have been diagnosed before the age of 12 months.

It is clear from the literature devoted to the effect of the low phenylalanine diet that treatment starting after the age of 1 year will seldom produce any appreciable rise in I.Q., though hyperkinesis and behaviour may improve; treatment starting between 4 and 12 months may be of more

benefit but treatment starting during the first 3 months of life will almost certainly prevent the serious subnormality to be found in most untreated cases.

The disease is caused because the patient cannot convert phenylalanine into tyrosine. Consequently the phenylalanine level in the serum rises and the urine contains excess phenylalanine, orthohydroxyphenylacetic acid, phenylpyruvic acid and other metabolites. Detection of one of these changes is the basis of the various screening tests which may be used.

The original discovery of phenylketonuria was made by Dr. Folling when he proved that the olive-green colour which developed in his patients' urine after the addition of ferric chloride was due to the presence of phenylpyruvic acid. For many years diagnosis depended on this simple test, but during the last 10 years developments in laboratory techniques have enabled other more sophisticated tests to be brought into use; without them mass screening programmes would be virtually impossible owing to the difficulty of collecting liquid urine from infants. All tests utilizing urine may be prejudiced by delay in the appearance, and variation in the concentration, of the substance to be detected. It is reasonable, therefore, to seek a screening method which will measure a rise in phenylalanine in the blood. Such a test has the great advantage that it may be used much earlier in life, for serum phenylalanine rises within a few hours of the start of milk feeding, whereas catabolites of phenylalanine may not appear in the urine for 1, 2 or 3 weeks.

Several quick and reliable methods suitable for mass screening are now available for estimation of phenylalanine in the blood.

The test which is at present most widely used is the bacteriological inhibition method developed by Robert Guthrie (Guthrie and Susi, 1963). Blood obtained from the infant by heel prick is spotted on to absorbent paper. A disc is punched out and placed on a culture plate. The culture medium is seeded with spores of *Bacillus subtilis* and contains 8 - 2 thienylalanine, a substance which inhibits the growth of the bacteria except in the presence of phenylalanine. The halo of growth surrounding each disc after 16 hours' incubation is compared with known standards on the same plate and measurement of the growth gives a semi-quantitative estimation of the phenylalanine. One technician can process about 1200 samples in a week (Cahalane, 1968).

No matter how elegant the laboratory test, any screening programme will fail unless specimens can be obtained from 00-100% of the population at risk, and unless an administrative system operates to ensure that the test is done and that a positive result is followed quickly by other tests to confirm or exclude the existence of disease.

The scope for implementation of the preventive measures in India is not as yet bright because of paucity of resources like technical personnel, material and finance.

FUNCTIONAL ASSESSMENT

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TEACHER CONSTRUCTED TESTS : (Criterion Referenced Tests)

Criterion referenced evaluation implies that the teacher will assess a child's skills, primarily in terms of the actual operations that child can or cannot perform, rather than in terms of how he stands relative to some norm or relative standard (such as those utilized in formal assessment) (Hammill & Bartel, 1978). In other words, the individual's performance is evaluated in terms of a specific criterion that has been set for the student. Group comparisons are not of real value in terms of teaching a child with different strengths and weaknesses. As the tests are very specific, criterion referenced tests provide the teacher with exact information required for planning instruction.

In a criterion referenced test, for example, the child will be described as having mastered number concepts up to 10 and oral counting upto 20 rather than designating him as grade equivalent of K.G. or Class I. This kind of information is more helpful to the teacher for day to day instructional decision such as planning for teaching number concepts of 11-15 and oral counting 21 to 30 and so on. It is obvious that knowing that the child functions at K.G. or Class I level is not very specific to form immediate instructional programmes objectively.

As this approach yields information that is very directly usable by the teachers in planning for the child, such tests are usually constructed by the teachers, based on the available data and prior instructional goals. On testing a child if the teacher finds that the child does not achieve a criterion, then the teacher must consider that either (i) the selected criterion is not appropriate or (ii) the student probably needs additional work to complete the required task.

Differences between norm-referenced and criterion referenced tests:

(i) Norm referenced tests are characterised by the use of standardised tests.

Criterion referenced tests are characterised by the teacher made tests for the individual child.

(ii) Most of the norm-referenced tests can be administered only by trained personnel. As the criterion referenced tests are teacher constructed, the teacher can administer it to assess the particular area that he/she intends assessing.

(iii) The results of norm-referenced tests are compared with the existing normative data and is qualitative in nature. It is expected in terms of grade equivalent, age equivalents, quotients or percentiles and gives an overall picture of the child. The criterion referenced tests on the other hand (set for an individual) are interpreted in terms of the child's own strengths and weaknesses. It gives the specific details of the child in a particular area.

Norm-referenced tests have thus reliability and validity and are thus standardized as a big sample. Criterion referenced tests differ from child to child based on the need and the results are directly applicable to the planning and for teaching. However, norm-referenced tests are expensive as compared to the criterion referenced tests.

Advantages of Criterion Referenced Testing:

1. Flexibility in using this type of test for the various individual requirement.
2. These tests have provision for continuous assessment for noting progress.
3. The assessment of the students is relative to his or her own strengths and weaknesses and not to any group performance.
4. It can be constructed and administered by the teachers and does not need a specialist's help.

5. The tests are inexpensive. They are actually constructed from children's books and work books and teacher's manuals.
6. They provide the teacher with exact information needed for teaching because of their specificity.
7. Interpretation and scoring are simple.

Many norm referenced tests have not included disabled students in standardized samples and therefore they are less suitable for testing the handicapped children.

Precautions to be taken in criterion referenced testing:

1. The teacher must be careful to see that she does not set an inappropriate criteria for the student. By this, the student may be unduly struggling with a specific activity as the set criterion was too high for him to achieve. Criteria that are too low also can cause problems. Therefore, the teacher must have a step-by-step assessment format so that she can exactly pinpoint where the child fails.
2. The efficiency of this type of assessment depends mostly on the competence of the person who assesses - the teacher. The teacher's bias and the reliability of the teacher as an observer and examiner must be taken into account.
3. The usual problems of lack of exposure to a certain task or history of inappropriate teaching must be taken into consideration before passing judgement.
4. Behaviours noted in general must be confirmed by the assessment. Effective criterion referenced testing necessitates careful planning, administration and interpretation.

CURRICULUM OUTLINE FOR MENTALLY RETARDED CHILDREN IN
INTEGRATED SET UP.

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INTRODUCTION:

Integrating mentally retarded children in regular class room is not similar to integrating children with other disabilities. For mentally retarded children as the level of mental ability will not be matching their normal peers, the curriculum should be modified to suit their needs, with focus on function oriented skills. In addition it is appropriate to maximize the integration in non-academic areas such as art and craft, sports, lunch time and so on.

The skills required to be trained at pre-primary level are very close to those required for normal children at that level. This would include self-help, motor, socialization, language and cognitive skills. In a pre school for normal children, the programming includes these areas and therefore, the same content can be maintained for the retarded children with emphasis on repetition and generalization of skills. As the child grows older, the curriculum in regular schools is basically academic oriented which a mentally retarded child will not be able to cope with. Therefore it requires modification to suit the level of the child and yet be functional. The following are the suggestions for modifying the regular education curriculum to suit a child with mild mental retardation in integrated set up.

PRIMARY LEVEL:

As the educable/mildly retarded children are qualitatively different from the normals, their classroom performance must be viewed in terms of curricular programming that is modified appropriately to suit the target population. A systematic approach to the construction of curriculum of EMR children is necessary so that content can be tailored to the needs of these children. The objective for each child should be formed after having an understanding of the abilities, interests and needs of the child.

Primary group includes children who have acquired at pre-primary level readiness to undergo training in classes I to V. As the mental ability of EMR children is limited the curriculum of classes I through V of regular school must be modified to suit these children, restricting the academic work to basic functional academics.

Some of the skills listed for the EMR children in primary group may seem too high for them. The resource teacher should aim at achieving the maximum possible depending on the each child's level of functioning and not all necessarily in all the skills listed.

CLASSES I - V - CURRICULUM OBJECTIVES:

- I. Maths
 - Book I, II & III
 - (1) Numeracy
 - Ordering of numbers 1 - 10,000
 - number values, quantity concepts and number placements 1 - 1,000
 - number operations
 - (i) addition: multiple, using 3 digit nos. concept of carry over.
 - (ii) subtraction: using 3 digit nos. concept of borrowing
 - (iii) multiplication - using 3 digit nos. multiplies by 2 digit nos.
 - table upto 10
 - skip counting by 2's, 5's and 10's.
 - (iv) division: 3 digit nos. divisible by 2 digit nos.
 - fractions (i) understanding the basic concepts.

- (ii) comparing fractions
 - (iii) conversions
 - (iv) simple additions & sub. tractions
- decimals (i) understanding the basic concept
 - (ii) conversions
 - (iii) simple additions & subtractions
- (2) Measurement
- (3) Weights
- (4) Elementary Geometry
- (5) Time and Calendar
- (6) Money
- (7) Number names upto 1,000 - oral recognition and naming

II. Language

- (1) Reading - Book I, II, III, IV reading the Text-word analysis and word meanings.
- (2) Comprehension - Upto level of Book III using supplementary readers and story books
 - reading comics and children's magazines.
 - language work books to introduce grammar including opposites, tense, gender singular, plural.
- (3) Written expression- relating everyday happenings and events of interest.
 - writing stories and compositions
 - completing open ended stories
 - picture descriptions and picture stories.
 - letters to family and friends
- (4) Oral expression - recitation of prose & poetry
- (5) Oral English - conversation classes to encourage comprehension and to practice expression.

III. Environmental Studies

- (1) History and Geography topics to increase knowledge of India and its states and an introduction to other countries.
- (2) General Science
- (3) Biology - Health and Hygiene
- (4) Moral Science
- (5) Civics

All above subjects to be approached as project topics and arts, crafts, language expression and outings to be correlated to Environmental Studies e.g. The Study of mountains in India will include paper models, clay models, pictorial charts, and expressions of language work, geometry and handwork.

The following subjects to be included as Integrated Activities in the Curriculum - It can be a class of unequal ratios of children - 10 from special class
2 from normal class

IV. Arts and Crafts

- (1) Free painting using water colours, oil colours, crayons or pastels.
- (2) Block printing, vegetable printing.
- (3) Tie & Dye.
- (4) Fabric painting
- (5) Simple needlework
- (6) Clay modelling
- (7) Papier mache
- (8) Macramae - chord knotting

V. Home Science	X	
VI . Music	X	
VII. Drama	X	Can be introduced as optional hobbies.
VIII. Gardening	X	Class- 2 ac-tivities selected from 5 for each child.
IX. Pet Corner	X	

X. Physical Education

- (1) Drill and Exercises
- (2) Yoga
- (3) Team Games

Equipment

1. A library stocked with supplementary readers, story books, comics and children's magazines.
2. Arts and Crafts materials.
3. Home Science equipment.
4. Gardening equipment
5. Percussion instruments for orchestra.
6. Pets
7. Stationary

CURRICULUM FOR THE SECONDARY GROUP:

Secondary level, which is otherwise known as the pre-vocational/vocational level of training aims at preparing a mentally retarded child towards acquiring appropriate vocational skills. At this stage, the functional academic work and vocational training are given simultaneously orienting the child to attain self sufficiency in the society. In addition social activities, communication skills and ability to enjoy leisure time also should be goals of this programme.

Therefore, with broad curriculum objectives, the following measures also must be taken:

1. Initially the student must be provided work experiences in controlled setting.
2. A large number of opportunities must be provided according to each individual's needs and abilities.
3. The teacher must keep in mind the chances of the work-placement of the student in the community.

The following are the curriculum objectives for the secondary level. The resource teacher must keep in mind that each child is different from the other and therefore she should use these objectives as a guide line to form programme for each child.

CURRICULUM OBJECTIVES:

I. CORE SUBJECTS

1. Commercial maths

- a) Practical use of mathematical operations for solving problems of money, measurement, time etc.
- b) Activities of social competence such as making simple budgets, bills and receipts, keeping account buying and using postage, concept of banking and saving, knowledge of rail and bus timings and fare etc.

2. Language

English: To know functional vocabulary list, key words, commercial signs, alphabets, product labels and environmental signs.

Oral : Conversational English to understand instructions, express himself/herself and to attend telephone calls.

Written: Signing, writing personal information sheet.

Hindi : Raising the standard to the literacy level recognised by the Open School Examination Board.

Reading: Introduce news paper, magazines and information books.

Written: Writing sentences, compositions and simple letter writing - business and social.

3. General Knowledge and Social competence

The topics covered here could be the extension of the Environmental Studies of Classes I - V. Opportunities should be given for more practical experience aiming towards self-reliance and independence among the students to the maximum extent possible.

4. Domestic Skills:

1. Dish washing
2. Laundering
3. Sweeping, mopping and dusting
4. Basic cooking for self needs.
5. Grooming for occasions and day to day
6. Personal hygienes
7. First aid and basic medical care.
8. Basic needle work.

II. Optional Subjects: (Based on aptitude and interest)

Each student will opt any 2 and specialize.

1. Home Science
2. Horticulture (Gardening)
3. Weaving.
4. Fine Arts
5. Music - Vocal/instrumental
6. Needle work- embroidery, knitting, etc.
7. Craft - Such as block printing, basket making,
carpentry, macramae, batik and tie a nd dye,
light engineering.
8. Any other.

EQUIPMENT: (Only major equipment are listed)

Home Science:

- Cooking range
- refrigerator
- mixer - blender
- adequate cooking and serving utensils including
pressure cooker, crockery and cutlery.
- containers for ingredients and cupboards for storage.
- aprons and other related equipment.

Horticulture:

- gardening equipment

Fine Arts:

- easel board
- water and oil colours, brushes
- aprons
- stationary

Music:

- different musical instruments depending on the aptitude and interest of the students and the availability of teachers.

Needle Work:

- Sewing machine and all related materials.

Crafts:

- respective craft equipment for chosen crafts.

EDUCATION OF THE MENTALLY HANDICAPPED

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1. INTRODUCTION

In recent years there has been a growing interest in the field of Special Education. Interest in the handicapped child, from a research point of view, has stimulated investigation into almost every area of development. In education, research programmes have been designed to make available the most improved methods and techniques of presenting the curricula. Psychological evaluation is much more specific. The psychological tests are sharper instruments to detect every degree of achievable potential. To put the multidisciplinary approach into action, it is agreed that the disciplines like medicine, psychology, occupational therapy, speech therapy, social work, special education-should demonstrate how their professional expertise relates to the teacher in the class, and how the teacher can detect a child's difficulties so that the appropriate professional could be enlisted in the care, education and treatment of the child.

The awakening of society to this problem of mental deficiency will form an important step in the planning of education for the mentally retarded. The education of mentally retarded has to have overtones of vocational training with ultimate rehabilitation as its goal. It has to be an integrated education-rehabilitation programme in continuum. Since the cultural and material needs of society will be constantly changing, the pattern of special education and vocational rehabilitation will also have to change accordingly. Provision of finances or services will not solve the problem. The mentally retarded require genuine public understanding and acceptance. The community has to create an atmosphere for acceptance.

A mentally retarded child, it is agreed on all hands now, needs to enjoy the fundamental rights of existence, care, education and other opportunities for intellectual, emotional, social and occupational adjustment in his family and outside as much as any normal child. It has been realised that mentally retarded are like any of us in many respects and have a right to education, work and employment. Thus their right to be responsible citizens has now been accepted and this acceptance is now held as a hall-mark of the cultural advance of any society. To effect this thinking in practice, it is necessary to make special efforts to educate, train and employ the retarded at the level of their ability. This has to be done not out of pity and sympathy for mentally retarded but as a result of practical recognition of the fact that the use of abilities of mentally retarded will be beneficial to the society and the nation. The developed countries, after having seen an undesirable result of their clinical and advisory services, have now started realizing that the concentration ought to have been on community based services and primary health centres. But it is very important that in a big country like India, concentration must be in the rural areas and community based services on a large scale are very much required. One can learn lesson from the mistakes of the Western Countries in the field of mental retardation. In the Indian context it is necessary to emphasize preservation of the families because the mentally retarded can be managed better at the level of the family and community.

No doubt, it is difficult to assess the magnitude of the problem but it should not dampen to work for their welfare. The mentally retarded in whatever number or form they exist like every other citizen of India have a fundamental right for their training and proper education in addition to their proper maintenance and up-keep. They ought to be enabled to stand on their own legs and be not left to become parasite on society. This glomy picture, however, has a silver lining as according

to IQ distribution, around 75% of the retarded are known to be only mildly retarded, another 20% moderately retarded and only 5% beyond any hope who need custodial care. The burden of the retardate falls not only on the parents but on the entire nation. If the upward trend of incidence is not checked, the entire economic structure of the nation may crumble down. It may also adversely affect the smooth social and cultural growth.

Questions are often raised that when adequate training and education are not available for the normal youth, why educate the mentally retarded and why make the facilities for vocational and institutional training available to them ? Only by heightening community awareness of this social problem through education and communication to the public, this view could be changed. In India, several conferences, meetings and seminars have been held, many commissions have been appointed, many recommendations have been made, and "White papers" have been issued. In all these meetings there was a move for better residential and day care facilities, provision for special schools for the mentally retarded and special classes in regular School systems. The country is now moving in the direction of integrating the education of the mentally retarded with that of normal children. Integrated Education of the Disabled (IED) is one alternative which is going to be very helpful in serving a large number of such children all over the country. The Government of India initiated the scheme of IED in 1974 which was modified in 1981. Hundred percent financial support from Central funds is available to all the States and Union Territories implementing this scheme. The programme is gaining momentum in pursuance of National Policy of Education 1986 which envisages education of disabled children in common Schools as far as possible. The programme has assumed further significance due to the nation's commitment to expedite universalization of elementary education in the seventh five year plan.

2. THE TWO GROUPS (EMR AND TMR)

For educational purposes two fairly distinct groups may be made within the broad Category of the mentally retarded. Although the differences which characterize these two groups are of degree rather than kind, they are nevertheless educationally significant. These two groups are (a) The Educable Mentally Retarded (EMR) and (b) The Trainable Mentally Retarded (TMR). An educable child is characterised by academic retardation rather than by emotional or behavioural problems. The reason for his retardation may be with him, with the teacher, with the school system, with the family or with two or more of these. It is necessary to determine the relation between his mental ability and School achievement. The EMR fall in the IQ range of 50-55 to 70-75.

A trainable child is one whose social prognosis is sheltered living, such living may be in a sheltered workshop, an occupational centre, a sheltered job within the community, a residential facility or the home. The important consideration is that these children will need some type of supervision for their entire lives. It is also important to note that the presence of central nervous system (CNS) pathology is the rule rather than the exception with this group. The TMR fall in the IQ range of 25-30 to 50-54.

In the case of EMR, the rate of development is only a half to three quarters that of ordinary children. In the case of TMR, the rate would be a third to a half that of the average child. All this implies that the intellectual gap between the normal and mentally retarded child, which exists at birth or soon thereafter tends to increase with age and is permanent and largely irremediable. This must be realised and accepted by parents and teachers alike if positive attitudes to the problem are to be developed.

3. CHARACTERISTICS OF SLOW LEARNERS (BORDERLINE)

This category of mentally deficient persons who are called borderline or subcultural normals or slow-learners have a mental age from 8 or 9 to 11 or 12 and children have an IQ that falls approximately in the 70 to 89 range. This group of pupils presents a serious and difficult problem to schools because they constitute a large segment of the School population (18%) and are capable only of poor quality, slow and limited School achievement. Their characteristics as far as schooling is concerned are :

- a) Their ability to deal with abstract and symbolic materials (language, number and concepts) is very limited.
- b) Their reasoning in practical situations is inferior to that of average persons; their attention span is relatively short; they are unable to interrelate a series of instructions or elements.
- c) They are unable to deal with relatively complex games or School games.
- d) They must be provided with relatively small units of work of simple type; they require much more supervision than do more capable pupils; they require much external stimulation and encouragement.
- e) Their understanding of rules of conduct in play and other social situations is inferior to that of average individuals.
- f) They are appreciably retarded in School achievement. Their work is slow and is of inferior quality.

4. EDUCATIONAL PROGRAMMES FOR THE M.R.

Mental retardation is not primarily a medical problem. It is an educational, psychological and social problem. It is thus the responsibility of the educators

who should help in formulating and putting across various ways and means by which the retardates can be gainfully educated and contribute their mite to the society.

4.1 Educational and Service Delivery Options :

Many approaches have been put forth in educating the mentally retarded. The prevailing trend in this respect is to provide the mentally retarded children with an integrated educational system wherein they are able to study along with their normal counterparts, attend the Schools which the normal children do, and become socially and academically productive individuals. When considering educational options for the retarded, it is important to keep in mind that (a) educational placement should be based on the child's needs; (b) the child should be placed in the most facilitative (or least restrictive) environment; and (c) placement should be flexible enough that a child could be moved to a different setting if the situation warranted it. The main educational and service delivery options are : (a) The Regular Classroom, (b) The Special Class, (c) The Special Day School, (d) Home-bound Instruction, and (e) Hospitals and Residential Institutions. During the past two decades, especially the 1970s, a movement has grown to provide services to the mentally retarded in their home communities. Living arrangements such as "Group Homes", "Supervised Apartment Living Units", "Foster Family Homes" located in the local community are preferable to large residential institutions. It is best to regard retarded people as "developing individuals" who are capable of growth and development that can lead to favourable changes in their behaviour.

4.2 Provision for the EMR

The standards aimed at and the methods employed should be functionally oriented. All the School activities should serve practical and realistic aims for this type of child. The main aims in the education of EMR are to promote three A's of personal Adequacy, Social Adequacy and Occupational Adequacy. Personal Adequacy

means more than just the ability to take care of ones ordinary everyday needs. Social adequacy means helping the child to behave and conduct himself generally in ways that make him acceptable to his fellowmen both in work and in leisure activities. Occupational Adequacy is essentially practical. We have to impart those skills which will enable him to secure employment and become either wholly/partially economically independent. Of equal importance is the promotion of attitudes and behaviour in the work situation which make him acceptable both to his employer and his fellow-workers. In the context of occupational competence, the tool subjects of reading, writing and counting should be emphasised. It is a pre-requisite that before teaching the three R's, the retarded needs coaching and training in the learning of language. The teacher in the School should focus on language training as a priority item when she deals with the mentally retarded. The conversations and instructions to the child should be in simple worded sentences. The teacher should allot a few hours entirely for this exercise. Emphasis should be on enough language background to understand what is going on around the child, rather than on correcting the grammatical errors. Corrections should be confined to only gross errors. Since the imagination of mentally retarded cannot be stretched too far, story reading and story telling should be extremely simple with plentiful use of pictures to sustain his interest. Greater the mentally retarded child's command over language, greater the chances of his becoming socially integrated.

Very beautifully illustrated colour picture books could serve as useful medium in teaching of language and speech to the beginner and it helps to bridge the gap between learning to talk and learning to read. One could help the retarded to learn to read by using printed cards-some cards bearing in bold clear letters the names of familiar persons, familiar objects, action words, etc. The books used for reading exercises should be very

carefully chosen suiting the level of comprehension and interest of the child. A mentally retarded child who has learnt reading upto a primary level needs a great deal of patience in doing practice, greater supplementary teaching and reteaching what had already been taught and learned. Use of picture colouring, matching words and pictures, drawing, picture finding and story making would all be very effective techniques to adopt in teaching the mentally retarded. Any mentally retarded with a capacity for learning to read should be helped to develop it to the fullest extent, so that his social integration and later vocational training could be facilitated.

While learning to read may be relatively simpler because of the involvement of rote learning, learning to write would be rather a far more difficult task to accomplish. No serious attempts should be made to teach writing to the child until the muscles involved are sufficiently developed to perform with reasonable ease and comfort. As in reading, considerable repetition, practice and re-writing are essential before the mentally retarded child could learn to write to a certain extent.

The ultimate purpose then of the education which has been outlined for the EMR is to help the child in a positive realistic way to take his place in the community as a wage earner and a citizen.

4.3 Provision for the TMR

The TMR children will always require some form of protected environment, either under guardianship in their own homes or under care in an institution or sheltered workshop. This does not mean that they are incapable of deriving benefit from education. No child should be thought of as ineducable. Our aim should be to make them as self-sufficient, socially adjusted and economically useful as their limited resources will allow. With these broad objectives in mind the curriculum would tend to cover the following main areas.

- a) Self care (eating, dressing, washing, toilet, etc.)
- b) Social Training (group activities as in games, story-telling, simple dramatic work, good manners, aesthetic experience, moral training etc.)
- c) Sensory Training (making full use of their senses, increasing awareness of themselves and the world they live in).
- d) Language Development (Story-telling, simple dramatic work, discussions, picture books, outings, etc.)
- e) Craft Work (Weaving, canning, basketry, rug-making, light assembly work, knitting etc.)
- f) Academic Skills (Knowledge of simple everyday words, simple calculations in money, etc.)
- g) Music (helps to release energy).

Thus the educational programme for the TMR emphasises physical and social rather than intellectual skills. Self-sufficiency and independence are stressed so that the burden which they impose on their parents and the community is minimized, while they themselves enjoy as full a life as is possible for them.

4.4 Role of Parents as Teachers

In India the retarded child as far as possible is to be looked after by the family. The Western Countries had their experimentation with institutional care. Large institutions were built in and was considered that they are the ultimate answer for the care of mentally retarded. The adverse effect the institutional atmosphere had on the children was something far from

desirable. It had a dehumanizing effect on them and many inmates developed what is called the institutional personality. As a result one came back to the concept of normalization and community care. Luckily in India we have not made such mistakes so far. The institutions that we have are the small day care institutions where the individual goes during the day time and returns home to his family in the evening. This is fortunate because the handicapped individual is not subjected to the undesirable institutional stresses as in the West. No institution can adequately replace a good home. It can only supplement it. It is better to keep a retarded child at home rather than place him in a boarding school. These children need individual attention which can not be provided by most of the institutions on account of limited resources.

The family is a stable social institution in our country. The family bond is strong enough in India, the child should be absorbed in the family as far as practicable. In such an affectionate and secure atmosphere the mentally handicapped have lesser problems than they have in monotonous and mechanical institutional atmosphere. The concept of mother teacher needs to be given proper consideration. If the mother devotes time for the retarded child in a natural environment, all encouragements and material incentives should be provided to the family. The state may give some financial assistance to the family. Some weekly classes for the parents of the retarded may be organized in different localities which would enable them to be acquainted with the probable solution for various problems faced by them and they would also be able to interchange their ideas and views regarding the problems of their offspring with the fellow parents. The parents can also be assisted in home care by a number of specialized services such as visiting nurses, social workers and visiting house-keepers and by an opportunity for temporary short-term placement of the retarded child in an institution or summer camp in times of crises and increased family tension. Recent

experience clearly shows that the introduction of modern diagnostic, treatment and training facilities into the community reduces the need for long-range institutional placement, which in time will probably be limited to bed-ridden, profoundly retarded patients and those with severe emotional disturbances. Thus residential insitutions may be provided for those whose environment is not a congenial One or whose condition is so profound that demands a lot of care which the family cannot afford. Proper legal provisions need to be made for the protection of the retarded against exploitation. Coordination of professionals concerned with the problem of the retarded may be effected in the form of meetings organized periodically at different locations. Need for public awareness about the problem of retardation and development of the correct attitude towards the retarded is another pre-requisite. The special care and training should be started at the early stages of child's life in the home. The parents in the home environment are the first and primary educators of the child. The early years in the life of a mentally retarded child are tremendously important for his physical, psychological, emotional, intellectual and social development. The early years are the opportune years to teach basic self-care skills such as eating, toileting, cleanliness, bathing, dressing and grooming, playing with toys and friends, etc. If the child does not get a good start at home during the pre-school years, learning these skills becomes very difficult and slow in School. Great care should be taken to establish a daily routine by which the self-care activities become part and parcel of the child. Once he gets familiar with his routine, it will automatically follow what comes next. After the routine has been established there should not be frequent changes.

5. CONCLUDING REMARKS

To sum up : The mentally retarded are capable of development and this capability can be more easily developed if they enter an educational programme very early in age. Hence with early diagnosis and proper stimulation, the mentally retarded can be helped to reach as near a normal development as possible. This improvement and progress are subject to the severity of mental retardation; milder the retardation, greater the possibility of the mentally retarded getting integrated with the normals. Mentally retarded need considerable systematic guidance and encouragement to imitate the behaviour of others and learn the various required patterns of interaction. Since they can get easily distracted, much tolerance, patience and flexibility on the part of the staff is called for. The mentally retarded need an intensive, repetitive and dedicated teaching with the help of adequate teaching materials. Hence smaller classes and more family based institutions are required wherein both dedicated trained teachers and cooperative parents could take up the task of education for the mentally retarded.

Thus educating the mentally retarded involves a great deal of effort on the part of the school, educators, public and the parents. The cost may be high but the end justifies the means. If we can help the mentally retarded child to achieve his fullest possible growth, then the cost is worthwhile.

DISORDER OF SPEECH, LANGUAGE & HEARING

Speech, language and hearing are so much important to human being that disorder in any of these may affect the individual's personality, self expression & communication as well as cut the socio-linguistic linkage. We shall study these disorders categorically.

- 1) Disorder of speech.
- 2) Disorder of language.
- 3) Disorder of Hearing.

Disorder of speech

It may be of following types.

- a) Disorder of Articulation.
- b) Disorder of voice.
- c) Disorder of fluency

a) Disorder of Articulation:

In this disorder, the person does not utter the speech sounds correctly. He may make the errors of following types.

- i) Substitution.
- ii) Omission.
- iii) Distortion.
- iv) Addition.

Causes of Articulation Disorder:

- i) Oral-facial malformation
- ii) Cleft of lip and/or palate.
- iii) Hearing loss
- iv) Lesions to the centre in the brain responsible for movement and co-ordination of speech muscle (Dysarthria)
- v) Functional.

Treatment:

Speech therapy.

b) Disorder of Voice:

Voice is produced by the vibration of vocal cords in the larynx (vocal box). Any abnormality at the region of larynx makes the voice abnormal.

Voice disorder is classified into three groups:-

- i) Disorder of pitch.
- ii) Disorder of loudness.
- iii) Disorder of quality

i) Disorder of pitch:

In this disorder, the person is not able to maintain the appropriate pitch level with respect to the age and sex. There are different types of pitch disorders.

- a) Too high pitch.
- b) Too low pitch.
- c) Monopitch
- d) Pitch Breaks.
- e) Falsetto
- f) Diplophonia.

ii) Disorder of loudness :

The person is not able to produce the voice as loud as to be understood.

Two major types.

- A) Aphonia:- It is referred to as complete loss of voice. e.g. (a) Laryngectomy. (Removal of larynx due to cancer)
(b) Hysterical aphonia (Loss of voice due to emotional stress).
- B) Dysphonia:- It is referred to as the partial or intermittent inability to produce voice.
- C) Weak voice:- (Phonasthenia): It refers to the voice that is too little and too weak to carry the normal burdens of communication.
- D) Excessive loudness:- The person speaks louder than normal e.g. in certain type of hearing loss; person working in noisy environment.

iii) Disorder of Quality:-

A) Nasality:-

- a) Hypernasality: It refers to the excessive flow of air through nasal cavity. There is excessive nasality due to failure to closure

- b) Hyponasality:- It refers to the lack of nasal resonance on the nasal consonant sound e.g. m/,/n/ and /n/.

B) Breathy voice:-

It refers to the excessive output of air flow along with phonation.

C) Harsh or strident voice:-

In such a voice, there is presence of the "vocal fry". This is accompanied by tensions.

D) Hoarse voice:-

In this type, we can see the mixture of breathy voice and harsh voice i.e. there is wastage of air as well as vocal fry.

Treatment for voice disorder.

- voice therapy

c) Disorder of fluency:-

Speech has rhythm and flow. Distruption of this flow makes the speech disfluent called as disorder of fluency.

Disorder of fluency is cãassified as :-

- i) Stuttering
- ii) Cluttering
- iii) Normal dysfluency

i) Stuttering :-

The repeatition, prolongation and hesitation of speech with respect to time are the characteristics of stuttering. These characteristics during childhood are referred to as normal dysfluency.

ii) Cluttering :-

It refers to as the excessive speed of speaking.

Irregularities of rhythm.

This includes the following abnormalities:-

- a) Accent
- b) Emphasis
- c) Intonation
- d) Phrasing
- e) Rate of speech

Language problem

It may be classified as followings:

a) Delayed language development :-

A child with delayed language development exhibits symbolic functioning that would be considered normal at an earlier age & the verbal skills are underdeveloped relative to the chronological age.

There are many factors which can cause a delay in speech and language development.

- 1) Hearing loss.
- 2) Mental Retardation
- 3) Emotional disturbance.
- 4) Poor speech and language stimulation.
- 5) Brain damage.

b) Disorder of language (dysphasia):

Dysphasia refers to the damage to the speech centres in the brain causes language disorder. Such people have difficulty in expressing and understanding speech. They may have difficulty in reading, writing and calculating.

Disorder of Hearing:

There are many type of disorder of hearing, one and all somehow interferes more or less in perception of speech.

Disorder of hearing may be classified as:

- 1) Disorder of External Ear.
- 2) Disorder of Middle Ear.
- 3) Disorder of Inner Ear.
- 4) Disorder of more than one.
- 5) Disorder at higher center in the brain.

OR

- 1) Conductive hearing loss.
- 2) Sensorineural hearing loss.
- 3) Mixed hearing loss.
- 4) Central hearing loss.
- 5) Functional hearing loss.

1) Conductive hearing loss :

- Disorder of outer or/and middle ear.
- Ear discharge is the main cause in the children.
- Middle ear bone deformities.
- External ear anomalies.
- Curable by surgery & medicine in most of the cases.
- Audiological management in some cases.
- BC is normal and AC is abnormal on audiological tests.
- May have voice and articulation problems.

2) SN hearing loss:

- Disorder of Inner ear or/and nerve.
- Not curable by medicine & surgery.
- Audiological management is essential.
- AC & BC both abnormal on audiological tests.
- Speech and language delayed if congenital, in case of acquired there may be some speech problems.

3) Mixed hearing loss:

- Disorder of Inner ear/nerve and middle ear and/or outer ear.
- Partly curable by medicine and surgery.
- Audiological management is must.
- AC and BC abnormal on audiological test.
- Speech and language may be delayed.
- Some speech problems may be seen.

4) Central hearing loss :

- A hearing loss due to some problems in the auditory pathways in the brainstem or the auditory cortex.
- Audiogram may be normal.
- Unable to use the incoming stimuli meaningfully.
- Unable to understand speech.
- No cure by medicine & surgery
- Poor performance in the school.

5) Functional hearing loss:

- Anatomically and physiologically organs are normal.
- Psychological problem.
- Audiological test shows normal.

INTEGRATED EDUCATION OF THE VISUALLY HANDICAPPED

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1. IED Programme

We do not have accurate data of blind and visually impaired persons in our country but on the basis of several community surveys there are about 9 million blind and 45 million visually impaired persons in India. Besides, about one million cases are added every year.

With this - high magnitude of visually handicapped population, lack of resources,
- limited number of special schools, financial constraints,
- shortage of trained manpower, etc., some alternative, strategy for education of VH children needs to be developed.

IED is one such alternative which is going to be very helpful in serving a large number of such children all over the country.

The Government of India initiated the scheme of IED in 1974 which was modified in 1981.

Hundred percent financial support from Central funds is available to all the States and Union Territories implementing this scheme.

The IED scheme is in operation in 14 States, including the Union Territory of Delhi. Most of the States/UTs implementing the scheme are still at the experimental stage. The programme is gaining momentum in pursuance of NPE 1986 which envisages education of disabled children in common Schools as far as possible. The programme has assumed further significance due to the Nation's commitment to expedite universalization of elementary education in the seventh five year plan. The stage of implementation has been upper primary or secondary in most of the States/UTs. Pre-primary education is almost missing. Close interaction among the disabled and normal children in impressionable years promote understanding

and appreciation of the assets and limitations of each other. Pre-School Education is the first-stepping stone in the life of every child, sighted or blind. The NAB-Mata Lachmi Nursery is one institution which admits children between 2 to 5 and follows the normal montessori course. The integration should start from the family, through immediate community and School to the world of work.

To ensure the benefits of IED programme, the administrator, who is obviously the Principal of a School of normal children, must be a qualified person and well versed with the problems of visually handicapped children. Also the teachers must have knowledge about the assets and limitations of VH children. It is with this objective Government of India is planning to start B.Ed. (Special Education) so as to enable the teachers to implement IED programmes effectively.

The following broad criteria may be adopted by the administrator to run an effective IED programme.

2. ADMISSION OF VH CHILDREN

Before admitting any handicapped child, the administrator must ensure that the particular handicapped child has only one feature of handicap and is not multiply handicapped. For instance if the child is blind, he should not have any additional handicap like deafness, etc., Secondly, the administrator must ensure, that the IQ of the handicapped child is at par with his normal counterpart.

3. AVAILABILITY OF INSTRUCTIONAL MATERIAL

The administrator and regular teachers must ensure that all specialized instruments or gadgets will be provided for the educational needs of the VH child. For instance, availability of text books in the braille script, tapes & cassette recorder, raised maps and diagrams, special equipment for reading and writing, three-dimensional aids, etc., must be made available to the blind child so that he may keep pace with the normal peers.

4. AN EFFECTIVE RESOURCE ROOM PROGRAMME

Before supplying the equipment and instructional material to the handicapped child, a Resource Room Teacher must be made available to teach the handicapped child to use these aids and equipments. Apart from imparting educational instruction to the handicapped child, the RT must be in constant touch with his parents for periodic guidance and counselling.

5. Coordination between Regular Teachers and Resource Teacher.

The regular teacher and the resource teacher share responsibility jointly. The resource teacher not only helps these children to learn special skills but also helps regular teachers, administrators and parents in understanding the abilities and disabilities of these children.

6. TEACHING AND LEARNING

The basic function of the eye is to collect visual information from the environment and transmit it to the brain. Sighted children receive about 85 to 90% information through their eyes. This input is denied to the blind. Blind children use other senses—primarily their ears and sense of touch. Thus through braille reading and writing, special auditory training, orientation and mobility training, they are able to receive education along with sighted children and thereby gain the same social attitudes, the same information and develop the same level of confidence.

A. Academic Standards

The teacher must maintain the same academic standards for all children. The same outcome can be expected. Occasionally, a lesson may be modified or substituted. With very young children, when text materials are highly or exclusively visual, a rare lesson may be omitted. However, these problems diminish as the child progresses through early standards.

B. Knowledge of Braille

A regular teacher will not require to learn braille in order to effectively integrate a braille reader into his class. However, if he is interested in learning, the RT will be happy to share this skill with him informally or even formally.

C. Carefulness about the usage of words

Does the regular teacher have to be careful about certain words he uses in the class ? Absolutely not. He can say, "Look at this", "Do you see what I mean" "Can't you see the meaning of that expression in the text ? etc. Be perfectly natural. A blind child is not a fragile thing, he must learn to interpret such expressions.

D. Usage of Special Techniques.

Does a regular classroom teacher use any special techniques in his teaching ? Probably not. One of the major responsibilities of the RT is to introduce complex concepts, unfamiliar page layouts, etc. in advance so that the blind child is prepared for regular teaching. RT will ensure that the blind child is comprehending fully. Some teachers place material on the blackboard without saying aloud simultaneously what they are writing, they find that blind child misses that information completely. A good teacher knows that a multisensory approach i.e. both writing on the board and saying what one is writing - is best to teach in integrated setting.

7. INTEGRATION AT THE SECONDARY LEVEL

Only academically bright students should be given the opportunity of integration at the secondary level.

Those students who have shown better skill in some trades other than academics, they should be given adequate opportunity to excel in their respective trade.

Unfortunately this is not being followed in our country. VH children with a mediocre academic performance are encouraged to go in for higher studies simply because scholarship to physically handicapped is available at a mere aggregate of 40% marks. As a result, such mediocre students get highly frustrated when they are unable to get gainful employment in the competitive world.

8. DEVELOPMENT OF PROGRAMME SUPPORT

The purpose of IED scheme must be explained to regular teachers, counsellors, social works, normal students, local and district supervisors and administrative personnel. The job of each person must be clearly understood. Successful integration can only develop when each person works in partnership.

9. IED PROGRAMMES IN THE RURAL AREAS

About 80% of blind children are living in rural areas. It is disheartening that all the IED programmes are available in urban areas. The handicapped have to leave their families and come to urban area. It is also disheartening that our trained personnel are not ready to serve in rural areas. Some package of incentives may encourage the RT to make IED programme a great success. The basic purpose of IED scheme is defeated if the handicapped have to leave their families and shift to urban areas for receiving educational facilities.

AIDS AND EQUIPMENTS OF THE RESOURCE ROOM

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Our country has witnessed phenomenal expansion of educational opportunities in the post independent period. However, disabled children have not yet benefitted substantially.

The National Policy of Education 1986 is envisaging education on disabled children as far as possible in common schools. This policy has urged the need for stupendous developments in personnel, material, planning and management, etc.

Placement of handicapped children in the common Schools demands many supportive services, one of the major items being the instructional material.

It is true that most of the handicapped children can assimilate more than 80 percent of the regular classroom instruction when appropriate reading material is provided.

Moreover, learning will become more interesting and enterprising when appropriate instructional strategies are adopted by the classroom teacher.

A simple provision of facilities does not necessarily ensure effective implementation. Many regular teachers at all levels are perplexed about how to meet the responsibility of the growing numbers of disabled children entering regular classrooms.

The facilities for the training of special teachers are now available in the Regional Colleges of Education, Regional Training Centres being run by the

National Institutes for the Handicapped, Special Education Departments in the Universities and selected colleges of Education. The training facilities are being further expanded. The successful implementation of the IED depends upon the responsiveness of the administrators and general teachers in the School. Short-term Orientation Courses for administrators, heads of the institutions and general teachers associated with IED Scheme maybe organized. There should be a well equipped resource centre at the State Level. It will be utilized in conducting training courses for the resource teachers and for other programmes conducted at the State Level.

Following composite area planning approach (CAPA), IED models need to be developed. Planning of a package of services in a specified sector is termed as composite Area Planning Approach. The size of the Area is determined by the criterion of economic viability and geographical feasibility. Another dimension of the composite area planning refers to the comprehensive nature of the package of services like prevention of disability, identification and assessment of the disabled, educational provision and rehabilitation.

The composite area should be as small as possible for effective utilization of resources. It implies clustering of Schools in a specified area for special provision and sharing of the facilities. A higher secondary School may be considered to be the nucleus of the proposed network. More specialized facilities will be located in the Special Education Centre (SEC) in the nucleus School from where they can radiate to the composite area institutions. This centre is to be equipped as a resource centre with full time staff. Around each

of such schools there are 2-3 middle and 6-8 Primary schools which are known as feeder schools.

Over 90% of the school going population has a primary school within a distance of 1.5 kilometres. Cluster children with one set of needs in one primary School and with another set of needs in another because primary Schools are available in walking distance in all directions. Some of the moderate needs of the disabled children can be met by ordinary teacher through adaptation of teaching and managerial skills with training.

A resource teacher is needed for children with sensory deficits. Specialist consultants to the regular teacher (resource teacher) are beginning to appear in School systems in several countries. By providing supplementary assistance, more disabled children can be served by the regular classroom teacher. The goals of integrated education are essentially similar for both able and disabled students. But to achieve these educational goals, we need to provide resource teaching in integrated setting. The resource teacher directs and monitors the disabled children according to their requirements. The integration requires resource room facility. A resource room may be set up preferably in an existing room in the school. A new room may be built only where no accommodation is available to the satisfaction of the State Government. Grant shall be available for construction of resource room in School in such circumstances. Resource room will have essential equipment, learning aids and material.

It may be necessary to remove architectural barriers or to modify existing architectural facilities so as to provide easier access to disabled children to

the School premises: Grant shall be available for this purpose for the schools where at least 10 handicapped children are enrolled.

Some core facilities can be provided in each of the institutions individually (i.e. in the Resource Room) and some on shared basis (i.e. in the Resource Centre). For example, blind child needs resource facilities for learning braille, mobility and for sensitization of auditory and tactual sensations. The hearing impaired children need hearing aids to overcome the hearing loss. Resource teaching helps Orthopaedically handicapped children for developing better coordination of muscles for learning academic skills.

The mentally retarded children are helped to develop daily living skills and are given remedial teaching to cope with the normal children.

Some of the following aids may be useful in resource room:

1. Pegs
Aims: To teach general awareness (number skill through play-way method).
2. Dominoes
Aim: To teach colour concept
3. Sensorial Apparatus
Aim: To teach size concept.
4. Matching Cards.
Aim: To teach how to match various types of figures.
5. Recreational Toys
Aim: To teach motor ability
6. Geometrical shapes
Aim: To teach shape concept

7. Mathematical Signs

Aim: To teach number skills.

8. Model Clock

Aim: To teach time concept

9. Alphabets/Digits.

Aim: To teach the child pre-reading.

Thus resource teaching helps these children to grow better. Resource Teaching is a pre-requisite of Integrated Education. There are three basic requirements of resource teaching.

- i) Congenial environment-positive attitudes of parents, siblings, teachers and peers.
- ii) adequately prepared instructional material for the child as well as for regular teachers in the resource room; and
- iii) the cooperative child who is attentive and interested in teaching learning activities.

The Resource teacher not only helps these children to learn special skills but also helps regular teachers, administrators and parents in understanding the abilities and disabilities of these children. The Resource Teacher acts as a bridge between teachers and child; administrators & teachers; and parents and child.

Thus the resource teacher is the catalyst for making the programme a great success. The integrated programme can only be successful when the resource teacher is committed to his services and he gets all cooperation from team of professionals required for identification, placement and monitoring.

The resource teacher must have well equipped resource room. The costly items may be installed in the resource centre and shared by different users within the specified area but the less expensive ones may be used in every institution for the resource room.

The world over, tremendous progress has been made in developing aids, appliances and apparatus used in training, employment, recreation and convenience of the disabled. Electronics have made great strides and electronic devices are available in plenty. If adapted to suit the disabled, they could greatly help in their daily activities. It is essential to mobilise the interest of this industry so as to produce aids and appliances useful for all categories of the disabled. Various Guides/Catalogues/Technical Aids Information Systems/Databases have been developed for the disabled in India and abroad. Some of the important tools are given below.

Dinesh Mohan and K.P.Kothiyal of IIT, New Delhi compiled a "Guide to Aids and Appliances for the Visually Disabled" in Journey, 1984. In Section I of this guide some relevant information about aids, appliances and equipment for the blind and the partially sighted has been included. In all there are 162 product entries. Major items of information are title, a brief description of the product, manufacturer's/Supplier's address and the price.

In this Section, the entries are made under the following heads:

- Braille Duplication and Braille Writers.
- Writing Aids
- Braille Paper
- Talking Books and Taper Recorders
- Mobility
- Low Vision Aids
- Other Optical Aids
- Educational Aids/Mathematical
- Educational Aids/Geography
- Teaching Aids
- Intelligence Tests

Vocational Aids
Measurement
Clocks and Watches
Games and Puzzles
Sports
Kitchen Equipment
Personal Devices

At the end of this section, a list of 40 manufacturers/suppliers with their addresses has been provided in alphabetic order for easy reference. Information on aids available outside India was compiled from literature available in the English Language and is presented in Section II. The National Rehabilitation Engineering Institute (NREI) has recently prepared a catalogue of Aids, Appliances for the Blind and Orthopaedically Disabled. The NREI was set up by the BMA as a premier centre for manufacture and supply of almost all imaginable and newly developed aids, appliances, rehabilitation tools for the blind and the orthopaedically handicapped. Recently, NAB LBMRC has produced an "Indian Guide to Aids and Appliances for the Blind" and there are 151 product entries in the Guide. A list of manufacturers and an up-to-date price list have also been provided. British Aids Database is a useful information tool for commercially available aids for the disabled. EEC Technical Aids Information System for disabled persons has been developed by the European Economic community.

ABLEDATA - an online computerized databank of equipment and devices for disabled people has been initiated by National Rehabilitation Information Centre in collaboration with Californian Department of Rehabilitation. About 10,000 aids and devices for handicapped people are likely to be internationally available via computer terminals in the near future.

Rehabilitation Information Resource Directory and online Rehabilitation Database have been prepared at National Rehabilitation Information Centre, Washington. These information sources provide all materials relevant to the education and rehabilitation of all categories of disabled persons.

A Directory of "Special Devices for Hard of Hearing, Deaf and Deaf-Blind Persons" has been compiled by Hurvitz & Carmen of Veterans Administration Medical Centre, California. Some of the leading organizations like National Centre on Educational Media and Materials for the Handicapped, Ohio; Educational Resource Information Centre (ERIC), Washington; Council for Exceptional Children (CEC), Virginia have developed very sophisticated aid and appliances for handicapped. In India also, some of the organizations like NIOH, NIVH, NISHH, NIMH, ALIMCO, AIIMS, NAB, NASEOH, etc. have taken a lead in developing aids & appliances for the handicapped persons.

A S S I G N M E N T S

SE 1. What is the definition of special education ?

SE 2. Why are incidence figures higher than prevalence figures ?

SE 3. List four concepts developed by early contributors to special education that are relevant today.

a)

b)

c)

d)

SE 4. Give four reasons why labels should be 'deemphasized'.

a)

b)

c)

d)

SE 5. Name the items included in an IEP.

a) .

b)

c)

d)

e)

f)

g)

SE 6. Describe the instructional setting alternatives
of the continuum of services model.

Setting 1.

Setting 2.

Setting 3.

Setting 4.

Setting 5.

Setting 6.

Setting 7.

Setting 8.

Setting 9.

Setting 10.

SE 7. Write True or False.

- a) The term "exceptional children" refers Primarily to the gifted and talented _____
- b) There has been a steady, even growth in special education services since the early 1900s _____
- c) Institutions were originally set up for custodial purposes. _____
- d) Mildly handicapped children should always be educated in regular classes. _____
- e) There are relatively more handicapped children in minority cultures than there are in the general population. _____
- f) In most states teachers have a legal responsibility to report suspected cases of child abuse and neglect. _____
- g) Although there may be architectural barriers in a given School, all programmes must be accessible to the handicapped. _____
- h) A person may be handicapped in one situation and not in another. _____
- i) Today the trend is to reduce diagnostic labeling, particularly of children with mild disabilities. _____

j) Labels should be used only when necessary because they may have adverse effects if used incorrectly.

k) Mainstreaming does not mean always placing exceptional children in regular classes.

l) Mainstreaming is the educational placement of the child in the least restrictive environment.

m) The move to small group homes from large residential facilities (known as de-institutionalization) is not necessary.

M.R.8. Write True or False:

a) A diagnosis of mental retardation should never be made solely on the basis of an intelligence test.

b) A special education teacher could not teach if he did not have the IQ scores of the mentally retarded children in the class.

c) Adaptive behaviour measurement is more subjective than measurement of intelligence.

d) Doll's major contribution to a definition of mental retardation is related to the area of social competence.

e) Retarded children should be classified only when classification leads to the development of an appropriate educational programme.

- f) One can place great faith in the use of incidence figures for planning services for the mentally retarded for any given community. _____
- g) A knowledge of the causes of retardation can be very helpful to a teacher in the actual instruction of retarded children. _____
- h) The causes of most cases of mental retardation cannot be clearly identified. _____
- i) Most TMR children will be educated in self-contained special classes. _____
- j) Special day schools for the retarded continue to be a popular educational option. _____
- k) Mental retardation is not primarily a medical problem. _____
- l) The education of mentally retarded should not have overtones of vocational training with ultimate rehabilitation as its goal. _____
- m) In India, concentration must be in rural areas and community based services on a large scale are very much required. _____
- n) The presence of CNS pathology is the rule rather than the exception with TMR group. _____

MR 9. Fill in the blanks.

- a) The popularly used tests of intelligence generally report a summary of performance in the form of an _____ score.
- b) The AAMD requires that a child' _____ and _____ be considered in diagnosing mental retardation.
- c) The components of adaptive behaviour are _____
- d) A significantly subaverage score is one that is _____ standard deviations below the mean on a standardized test of intelligence.
- e) The developmental period is the period between the child's _____ and _____
- f) The three categories in the classification system which are most useful for special education programming are _____
- g) The major criticism of foster family care for the retarded is _____
- h) The mentally retarded child has especial problems with letters which have _____ and _____
- i) The look-say method is a disaster for mentally retarded child. He needs phonics and tactile perception through _____

- j) The _____ between professional people is a big deterrent to develop meaningful programmes for the retarded.
- k) It is necessary to _____ the programme if it has not done any good to the child.
- l) Slow learners must be provided with relatively _____ of work of a simple type.
- m) The slow learners form a _____ of the school population.
- n) The group between one and two standard deviation below the mean is described as having _____.
- MR 10. Complete the following sentences with one of the options provided.
- a) The focus of mainstreaming is to help _____ the life of the retarded child (Protect/Normalize/organise).
- b) Most professionals believe that _____ programmes provide the mentally retarded and handicapped with the best educational opportunities. (Special Education/Mainstreaming/Segregated).
- c) _____ is one alternative which is going to be very helpful in serving a large number of mentally retarded in India (IED/Special School/Residential schools/Sheltered Homes).
- d) National Policy of Education-1986 (MHRD, Govt. of India) envisages education of handicapped children in _____ as far as possible. (Common Schools/Special Schools).

- e) _____ are the first and Primary Educators of the mentally retarded child. (Social workers/Parents/Teachers/Community Health workers/Doctors).
- f) To be classified as mentally retarded, a person's IQ, as measured by a standardized intelligence test, must be lower than _____ (55/70/100).
- g) Organic causes of mental retardation generally lead to _____ retardation. (mild or moderate/severe or profound).
- h) Mental retardation that occurs because of a lack of Oxygen in the bloodstream is caused by _____ (Systemic disease/infections disease/Physical agents).
- i) Special education programmes have been challenged on the basis of depriving children of _____ (personalized attention/Proper diagnosis/ their constitutional rights).
- j) Davison and Neale have suggested that _____ of retarded children would probably achieve higher levels of intellectual and social functioning if they were provided with appropriate training at home (20%/40%/a majority).
- MR 11. Which of the following is not used to classify an individual as mentally retarded.
- a) An IQ score for below the mean.
 - b) An inability to meet social demands.
 - c) Problems that manifest themselves before the age of sixteen.
 - d) At least one behaviour problem.

- MR 12. Which of the following best describes a case of mild retardation ? The person can
- a) achieve an intellectual level comparable to a 16-year-old.
 - b) Work in skill areas with some supervision.
 - c) Care for himself in basic hygiene areas but cannot do much more on his own.
 - d) None of the above.
- MR 13. There are more mentally retarded people in the lower socio-economic classes because.
- a) Children of these classes are mentally not reinforced for intellectual abilities.
 - b) Retardation is detected and reported by welfare and poverty programmes.
 - c) Lower class people have inferior genes
 - d) None of the above.
- MR 14. Which of the following is a false statement ?
- In the next decade we can expect
- a) more specific labels for the mentally retarded
 - b) more support from the legal system for the retarded.
 - c) less segregation of retarded and average children in the classroom.
 - d) educators to develop more positive and productive programmes for the retarded.
- MR 15. The idea of providing extra help and specially trained educators to assist retarded children in making significant gains

- a) is mandated by the Education for all Handcapped Children's Act.
- b) is referred to as special education
- c) has received a considerable amount of criticism
- d) all of the above.

MR 16. Fill in the blanks

- a) The components of AAMD. Definition of mental retardation are
 - i) _____
 - ii) _____
 - iii) _____
- b) Approximately _____ % of population in India is considered mentally retarded.
- c) There are variations in the prevalence of mental retardation in India. The reasons for them could be lack of uniformity in
 - i) _____
 - ii) _____
 - iii) _____

MR 17. Match the following

- | | |
|-------------------------|--------------------|
| 1. IQ level | medical |
| 2. Level of functioning | psychological |
| 3. Cause of MR | adaptive behaviour |
| 4. Deficient in MR | educational |
| 5. Severe | 50-70 |
| 6. Mild | 35-49 |
| 7. Moderate | below 20 |
| 8. Profound | 20-34 |

MR 18. Study the following statements and write True or False.

- a) A five year old child with mild mental retardation cannot be distinguished from a normal child of five years in many areas of development.
- b) A 16 year old person with moderate mental retardation can go beyond 5th grade level in academic subjects.

- c) A 22 year old person with severe mental retardation can be trained in all the vocational skills and can support himself and his family.
- d) A 13 year old child with profound mental retardation will respond for training in self help skills.
- e) A 27 year old person with mild mental retardation can pass pre-university examination.

MR 19. Which one of the following is not a prenatal cause of mental retardation.

- a) Exposure to X-ray
- b) Birth anoxia
- c) Rubella
- d) Chromosomal abnormality

MR 20. Which one of the following is the most common cause of mental retardation in India ?

- a) Diabetes in the mother
- b) Difficulties during delivery of the child
- c) Jaundice in the mother
- d) German measles in the mother

MR 21. Mental retardation can be caused by

- a) Ill treatment of mother during pregnancy.
- b) Interacting with mentally retarded persons.
- c) Pregnancy after 35 years.
- d) Black magic.

MR 22. List four preventive measures against mental retardation during the post natal period.

- a) _____
- b) _____
- c) _____
- d) _____

MR 23. In a mentally retarded person with fits

- a) Fits cannot be controlled
- b) Behaviour problems are always present
- c) Frequent fits impair learning process
- d) None of the above.

MR 24. Hyperkinesis includes all of the following except

- a) Excessively active
- b) Distractibility and short attention span.
- c) Vacant stare
- d) Lack of inhibition and poorly coordinated activity.

MR 25. List four conditions which can be mistaken for mental retardation.

- a) _____
- b) _____
- c) _____
- d) _____

MR 26. One of the commonest forms of multiple handicap is

- a) Down's Syndrome
- b) Cerebral Palsy with mental retardation
- c) Learning disabilities
- d) Mental retardation with microcephaly

MR 27. Match the following:

- | | |
|-----------------------------|--------------|
| 1) Neck control | a) 8 months |
| 2) Sitting without support | b) 24 months |
| 3) Standing without support | c) 4 months |
| 4) Indicates toilet needs. | d) 10 months |

MR 28. Give any three indicators of mental retardation

- a) _____
- b) _____
- c) _____

MR 29. Match the following:

- | | |
|-----------------------------------|--------------|
| 1) Social smile | a) 6 months |
| 2) Drinking from a glass by self. | b) 4 months |
| 3) Rolling Over | c) 15 months |
| 4) Walking without support. | d) 21 months |

MR 30. Arrange the following steps in sequence.

- 1) Intervention
- 2) Diagnosis
- 3) Screening for mental retardation
- 4) Assessing current level of functioning
- 5) Psychological testing

MR 31. A male child aged 9 months is brought to you with the complaints of inability to hold the head, not able to roll about and not able to fix the eyes on parents. The child cries when hungry. The mother feeds the child periodically. On examination the child is found to be in lying position, not responding to any stimuli. The doctor after examining reported that clinically all the systems are normal.

MR 32. A ten year old boy is brought to you with the complaints of poor scholastic performance and adamant behaviour. He is studying in 5th standard. The parents report that the boy scores poor marks in class examinations since one year. He picks up quarrels with other children in the school. He shows interest in games and is found to be playing all the time. According to doctor's report the boy is normal physically. How will you proceed further in this case ?

MR 33. A seven year old girl is brought to you with the complaints of inability to talk properly, difficulty in walking, fits once a month and inability to brush teeth, bathe and dress properly. On a detailed enquiry it is found that the child was born after a prolonged labour and all the milestones of development of the girl were delayed. The doctor has prescribed medicines for fits and the physiotherapist is giving passive stretching exercises for the limbs as the limbs were found to be stiff. How will you proceed further in this case ?

MR 34. What are the three types of tests used for assessing general intelligence ?

- a) _____
- b) _____
- c) _____

MR 35. Developmental schedules are most useful for the age group:-

- a) 3-22 years
- b) 5-15 years
- c) 0-03 years
- d) all of the above.

MR 36. The most commonly used test for assessing adaptive behaviour in mentally retarded persons is

_____.

MR 37. A gross assessment of the _____ and _____ deficits are necessary before assessment as they affect the psychological test performance.

MR 38. Write true or false.

- a) The intellectual functions and adaptive behaviour of a mentally retarded person can be assessed by using a single test.

True/False

- b) Presence of sensory and motor impairments, language delay and behaviour problems pose difficulty in the psychological assessment of mentally retarded persons.

True/False

- c) While testing a mentally retarded person, one should choose a complex test first and then go for simpler tests.

True/False

- d) Keeping colourful toys, toffees and biscuits come in handy in establishing rapport with a mentally retarded child during a test situation. True/False
- e) Seguin form board test is a verbal test. True/False
- f) Vineland Social Maturity Scale is the most commonly used Adaptive Behaviour Scale for mentally Retarded individuals in India. True/False
- g) Observations about family interaction patterns should not be included in a psychological report. True/False
- h) The IQ score is a gross estimate of the general intellectual functioning and it does not give a view of the abilities on individual test items. True/False

MR 39. Breaking down the teaching steps into small, systematic ones is called _____

MR 40. Write True or False

- a) The activities/skills must be taught only once a day. True/False
- b) Training of the mentally retarded person must be carried out only at the DRC. True/False
- c) Child should be appreciated even if he attempts to do a particular task. True/False
- d) Assessment of mentally retarded persons should be done only once in 3 years. True/False
- e) Two or three skills or activities can be simultaneously taught to a mentally retarded child. True/False
- f) Children with profound mental retardation can be integrated in normal schools. True/False

MR 41. The three aspects of the integrated education of the disabled are

- a) _____
- b) _____
- c) _____

MR 42. A male child aged 2 years needs training in sitting without support. He does not have any other handicap. What activities will you take up to train him ?

MR 43. A child of 4 years needs training in standing without support. He does not have any other handicap. What activities will you take up to train him ?

MR 44. A child of 10 years needs to be trained in indicating his toilet needs. How will you train him ?

MR 45. Behaviour modification may be used to

_____undersirable behaviours and _____adaptive behaviours.

MR 46. Behaviour modification may be used to _____undesirable behaviours and _____adaptive behaviours.

MR 47. The target behaviour should be defined in _____and _____terms.

MR 48. Name the five steps in implementing a behaviour modification programme.

- a) _____ (b) _____
c) _____ (d) _____
e) _____

MR 49. Write true or false.

- a) Antecedents are the events which occur immediately before the behaviour has occurred. True/False
- b) Differential Reinforcement should never be used with punishment procedures. True/False
- c) Extinction should be used when problem behaviours are self-injuries or harmful to others. True/False

d) Aversion is the last method to be used for decreasing undesirable behaviours. True/False

e) Intermittent reinforcement is generally used first when teaching a new skill. True/False

MR 50. Name any four techniques for decreasing undesirable behaviours.

a) _____ (c) _____

b) _____ (d) _____

MR 51. The four principles of presenting reinforcement are:

a) _____ (c) _____

b) _____ (d) _____

MR 52. Match the following:

- | | | | |
|-------------------------|-----|-------------------------------------|-----|
| 1. Social reinforcer | (a) | Pleasant event following behaviour. | () |
| 2. Primary reinforcer | (b) | Money | () |
| 3. Secondary reinforcer | (c) | Praise | () |
| 4. Positive reinforcer | (d) | Chocolates | () |

MR 53. The two types of chaining procedures are

_____ chaining and
_____ chaining.

MR 54. What are the four schedules of intermittent reinforcement ?

a) _____ (c) _____

b) _____ (d) _____

MR 55. Name four commonly used procedures for increasing adaptive behaviours.

a) _____ (c) _____

b) _____ (d) _____

MR 56. The characteristics of a good counsellor are

- a) _____ (c) _____
b) _____ (d) _____

MR 57. List four important messages which you would give to the parents of a mentally retarded child in a rural area.

- a) _____
b) _____
c) _____
d) _____

MR 58. Write True or False

- a) Parents should be given high hopes that the mentally retarded child will show dramatic results. True/False
b) Lot of time must be spent in understanding the problems of the parents. True/False
c) The goal of counselling is to protect the mentally retarded child from being illtreated. True/False
d) Forming parent associations in the village will help the parents to understand the problem better. True/False

VH.59 Fill in the blanks.

- a) The two parts of the visual system are the _____ and the _____.
b) Nearsightedness is to _____ as farsightedness is to hyperopia.

- c) Two diseases that resulted in large numbers of multi-handicapped blind children are _____.
- d) _____ is the eye disorder caused by excessive Oxygen in incubators of premature babies.
- e) Visually impaired children are classified as either _____ or _____.
- f) With correction, a legally blind child has visual acuity of 20/200. A partially seeing child has visual acuity between _____ and _____.
- g) Field of vision is measured in terms of _____.
- h) The name of the most common instrument for screening visual impairments in children is the _____.
- i) The most widely accepted reason for social - emotional adjustment problems in blind children is _____.
This can be overcome by _____

_____.
- j) The most important areas included in the curriculum of the visually impaired but not in the curriculum of those with normal vision are _____ and _____.
- k) The media through which visually impaired children obtain information are _____,
_____ and _____.
- l) The first Schools established for the visually impaired in Europe and the United States were _____ Schools.

- m) Persons involved in assessing visually impaired children should pay particular attention to the effects of the loss of vision on _____ development.
- n) Visual acuity is the ability to clearly distinguish _____ or _____ details at a specified distance.
- o) Visual acuity is measured by having children read letters, numbers or other symbols from a snellen chart _____.
- p) The basic function of the eye is to collect _____ from the environment and transmit it to the _____.
- q) A person with normal eye sight is said to have _____.
- r) If a person's field of vision is 20 degrees or less, then he/she is considered _____.
- s) The prolonged sensory deprivation is likely to influence _____ and _____ of the blind.
- t) A person who has received the best optical correction and can see at _____ in the best eye what a person with normal vision can see at _____ is considered legally blind.

VH 60. Write true or false.

- a) Cataracts are growths on the eye _____
- b) Visual acuity is a term for sharpness and clearness of vision. _____

- c) Although blind children may have delayed physical development due to their inability to do some physical activities, they typically do not differ in physical ability from normal seeing children. _____
- d) Visually handicapped children are usually taught the same sequence of subjects as children with normal vision. _____
- e) Many instructional procedures that are effective for normal children are also effective for visually impaired children. _____
- f) Partially seeing children who hold their books close to their eyes when reading should be instructed not to hold the materials so close. _____
- g) The residential school traditionally follows the same curriculum as other schools in the same state or region. _____
- h) Once the child has been placed in a particular type of programme, it is safe to assume that the child will remain in that programme throughout his/her school career. _____
- i) The school principal makes the decision about the type of programme that a visually impaired child should be placed in. _____
- j) Parents must consent to the collection of evaluation data and to the placement of their visually impaired child in a particular programme. _____
- k) Normative data provided for standardized tests are appropriate for use with visually impaired children. _____

- l) The community affects a blind child by not only its general attitude but also the attitude and behaviour of the neighbours, parents and peers. _____
- m) Teacher can generalize about blindness on the basis of limited experience. _____
- n) All blind have special talents like musical talent and fantastic memory. _____

VH.61 Define visually impaired children.

VH.62 Explain the meaning of an index of visual acuity that is stated as 20/150.

VH.63. From the perspective of educational definitions, how would you differentiate between a blind and partially seeing child ?

VH.64. List of the symptoms that may indicate eye problems.

a)

b)

c)

d)

e)

f)

g)

VH.65. List three possible causes of apparent retardation in the intellectual development, School achievement, and concept development of blind children.

a)

b)

c)

- VH.66. List **some** optical aids that can be used by partially seeing children to assist them in reading.
- VH.67. Technological advances have resulted in the development of a number of exciting new devices for the visually impaired. List some devices related to reading that blind people can use.
- a)
 - b)
 - c)
 - d)
- VH.68 List the five types of local day school programmes provided for visually impaired children.
- VH.69. List five types of information that are used to make placement decisions for visually impaired children.

VH.70. What three types of instruments are used to assess VIC ?

VH.71. De Mott suggests that information about a number of areas be included in the educational assessment of the visually impaired. List some of these areas.

VH.72. Sighted persons feel pity for visually impaired because:

- a) Visually impaired cannot live effectively in the world of sighted.
- b) Sighted people fail to understand the strength of visually impaired.
- c) It is taught to sighted by the society.
- d) Kindness is a value.

VH.73. A visually impaired child can learn effectively if:

- a) He is given a variety of experience
- b) He is taught only through auditory mode.
- c) He is given a chance to learn.
- d) He is left to himself.

VH.74. Parents of VIC tend to overprotect because:

- a) they love their children.
- b) they hate their children

- c) they are afraid of their safety
- d) they fail to treat them as normal children.

VH.75. Daily living skills are

- a) curricular skills
- b) extra-curricular skills
- c) skills for performing day-to-day activities.
- d) skills for maintaining good health.

VH.76. Skills required for the readiness of the child to learn day-to-day survival skills are

- a) daily living skills
- b) pre-requisite skills
- c) academic skills
- d) curricular skills.

VH.77. For teaching all daily living activities.

- a) a common methodology should be followed.
- b) methodology should be based on the nature of activity.
- c) methodology is not necessary.

VH.78. Daily living skills should be taught according to

- a) age levels
- b) grade levels
- c) ability level
- d) none of the above

VH.79. Aids are necessary for teaching

- a) all daily living skills.
- b) certain daily living skills.
- c) academic and not daily living skills.

VH.80. Learning of daily living skills by an individual

- a) continues even after the schooling
- b) continues till the end of School year
- c) takes place at different time intervals
- d) takes place in pre-school years.

VH.81. Listening to music is

- a) an academic skill. b) an auditory skill
- c) a daily living skill

VH.82. Money identification and money management is

- a) an olfactory skill
- b) a daily living skill
- c) an orientation and mobility skill

VH.83. Teaching daily living skills can be regarded as

- a) a separate subject
- b) an integral part of the class lessons
- c) out of class hours activity

VH.84. Teaching household activities is

- a) mostly meant for children
- b) mostly meant for men
- c) mostly meant for adult blind women

VH.85. The abilities of the individual to move from one place to another are known as

- a) Orientation skills
- b) Plus curricular skills
- c) Mobility skills
- d) Walking skills

- VH.86. Teaching of mobility skills should be the same for all VIC.
- a) Yes, it should be the same for all
 - b) No, it depends upon the onset of blindness
 - c) No, it depends upon the daily living skills.
 - d) It depends on the capability of the teacher.
- VH.87. Orientation Skills are greatly influenced by
- a) the sense of taste.
 - b) the senses of touch and hearing
 - c) the sense of smell
 - d) the vision.
- VH.88. Widely used mobility techniques in developing countries are
- a) sighted guide techniques
 - b) guide dogs
 - c) long cane techniques
 - d) electronic aids
- VH.89. Guide dog techniques cannot serve the purpose of developing countries owing to the
- a) inadequacy of training methodology
 - b) enormous cost of the system
 - c) prejudices among visually impaired people
 - d) shortage of dogs
- VH.90. At the primary school, the VIC should
- a) not be taught O & M skills
 - b) be taught the long cane techniques
 - c) be taught the pre-cane mobility skills
 - d) be taught guide dog technique
- VH.91. In an integrated setting, the VIC can be oriented to the School environment in a better way by
- a) the sighted peer group
 - b) the regular teacher
 - c) the resource teacher
 - d) the parents.

VH.92. In an integrated setting

- a) the resource teacher has to teach all mobility skills.
- b) the resource teacher could teach O & M skills within the School Campus but not for outside travel.
- c) the resource teacher should not teach mobility
- d) the resource teacher should leave it to regular teachers to teach.

HH.93. Fill in the blanks.

- a) The part of the brain most important to hearing is the _____
- b) The human ear begins responding to sound at _____ of fetal development.
- c) A person who had a hearing loss severe enough that he cannot learn language through hearing is classified as _____.
- d) When a hearing loss is assumed to explain poor School performance, the loss would be termed _____.
- e) When there is damage or deterioration of the cochlea or VIII nerve, the hearing loss is termed _____.
- f) When a child displays weakness in auditory skills and yet shows no measurable hearing loss, a _____ should be suspected.
- g) A graphic portrayal of a person's hearing is called in _____
- h) The speech frequencies on the audiogram are _____; _____ and _____
- i) The audiometric test that measures a person's ability to understand speech is called _____
- j) The average age at which children produce their first words is _____

- k) Severe language and speech disorders should be expected if a child's average hearing loss is greater than _____ dB and it occurs before age _____.
- l) A child whose hearing loss is greater than _____ dB is considered deaf.
- m) The medical specialist who typically deals exclusively with children is called a _____
The medical professional who specializes in treating ear disorders is the _____.
- n) _____
consists of techniques that help a hearing impaired child use his residual hearing as much as possible.
- o) When a hearing impaired watches a speaker's lip and facial movement, she is _____.
- p) Educators of the deaf who prohibit the use of gestures by the child are called _____.
- q) The professionals who evaluate hearing by means of audiometric testing are called _____.
- r) Educational settings for the severely hearing impaired include the _____
and _____.
- s) The intensity or loudness of normal conversational speech at a distance of five feet is between _____ decibels.
- t) Hearing loss can affect _____
_____ development, and put time _____ and _____ adjustment.
- u) Hearing aids make sounds _____
and they do not make sounds _____.

- v) For educational purposes, children with hearing disorders are classified as either _____ or _____.
- w) The philosophy of total communication makes use of both _____ and _____ procedures to teach deaf children.

HH.94. Write "True" or "False"

- a) Earwax is dirt and should be cleaned from the ears. _____
- b) Children's hearing cannot be tested accurately until they are six years of age. _____
- c) The normal child established an auditory feedback loop at three months of age. _____
- d) Deaf individuals are two to five years mentally retarded as compared to individuals with normal hearing. _____
- e) The reading skills of deaf individuals may lag as much as eight to nine years behind those of their hearing peers. _____
- f) Hearing aids are electronic devices that always make sound clearer. _____
- g) Seventy to eighty percent of the sounds in our language are visible on the speaker's lips. _____
- h) Language and speech delay can result from recurrent ear infections. _____

- i) Hearing aids are never appropriate for children with conductive hearing loss. _____
- j) The classroom teacher should use exaggerated lip movement and speak loudly to assist the hearing impaired child. _____
- k) The manual approach to communication stresses speech reading and auditory training. _____
- l) The intensity range for average conversational speech is 40-65 dB _____

HH.95. What are the three basic components of a sound system ?

HH.96. How would you define sound ?

HH.97. List the five major types of hearing loss.

HH.98. What are four signs that might indicate a hearing loss ?

HH.99. List the different types of audiometric test.

HH.100. What are some major areas of development and adjustment for those with hearing loss ?

HH.101. What are four reasons that a child's hearing aid might squeal ?

HH.102. What are the reasons a physician might suspect a hearing loss in a newborn baby ?

HH.103. Name some signs of possible hearing loss that a classroom teacher should watch for.

HH.104. Read the following and tick the correct answer

104.1 The resource teacher works closely with disabled child in collaboration with

- a) regular teachers b) parents
- c) physicians and other specialists
- d) all.

10.4.2 The prerequisites of resource room teaching are ;

- a) a visiting resource teacher
- b) a very big resource room
- c) 10-20 hearing impaired children
- d) none of the above.

104.3 Do all hearing impaired students require resource facility ?

- a) all
- b) mild and moderate
- c) moderate and severe
- d) severe and profound

104.4. Periodic assessment is done by the resource teacher in order to

- a) correct speech
- b) develop resource facilities
- c) arrange parent-teacher conferences
- d) know the level of performance and adjustment of the child.

104.5 What kind of exercises are required to develop correct pronunciation in hearing impaired.

- a) the use of finger spellings
- b) similar sounds in the minimal pairs
- c) adjustment in the regular class
- d) none of the above.

104.6 The administrators and heads of regular schools should

- a) not allow the hearing impaired to be admitted in their school.
- b) encourage the admission of the hearing impaired child to their school.
- c) consult higher authorities about such admission
- d) consult parents of other children about such admissions.

- 104.7 To give the maximum benefit of instruction to the hearing-impaired child, the regular classroom teacher
- a) should speak very slowly
 - b) should speak very loudly
 - c) should make some changes in the style of his teaching and behaviour.
 - d) should not put questions to him
- 104.8 The hearing-impaired can substantially hear and understand others if.
- a) he is given nearly auditory training and practice in speech reading.
 - b) he is very intelligent.
 - c) he is given some special diet.
 - d) he is very healthy.
- 104.9 The most important role in successful integration of a hearing-impaired child in a regular school is of
- a) the head of the School
 - b) the non-teaching staff of the School
 - c) the hostel staff
 - d) the class teacher
- 104.10 The hearing impaired child can do better than his hearing peers.
- a) in all activities of the School
 - b) in co-curricular and extra-curricular activities.
 - c) in any particular academic subject
 - d) in following class instruction
- 104.11 Generally, the hearing impaired child has defective
- a) physique
 - b) language and speech
 - c) social attitudes
 - d) mental growth

- 104.12 The desirable or undesirable behaviour of hearing students of a class towards the hearing impaired child depends very much on
- a) how the head of the School treats him.
 - b) how the other staff members treat him.
 - c) how other children of the School behave with him .
 - d) how the class teacher treats him.
- 104.13 The hearing impaired child can understand his teacher's speech better if
- a) the classroom is well lighted
 - b) the classroom has ordinary light.
 - c) the classroom has special furniture for him.
 - d) the classroom has special material for him.
- 104.14 The shortcomings of hearing impaired child can be overcome by the
- a) head of the school
 - b) class teacher
 - c) resource teacher in a resource room
 - d) parents.
- 104.15 The successful integration of a hearing impaired child in a regular school depends on the attitude of the
- a) head of school alone
 - b) staff members only
 - c) parents of hearing children
 - d) all who come in contact with him.
- HH 105 Give the various degrees of hearing loss.

- LD106 What are Wallace and McLoughlin's four dimensions of learning disabilities ?
- LD107 List the seven academic areas in which an LD child may have a severe discrepancy between ability and achievement.
- LD108 What are the three primary objections to labeling a child as learning disabled ?
- LD109 In order to be called a characteristic, difficulties that children with learning disabilities have must be
- LD110 Give the seven educational characteristics of reading disability.

LD 111. What are the factors related to reading disabilities ?

OH 112. Write "True" or "False".

a) The term "Proximodistal" is used to refer to the process whereby the child gains control of the muscles in the trunk before gaining control of muscles in the fingers

b) Cerebral palsy is caused by brain damage.

c) There is higher incidence of speech disorders, sensory disorders and mental retardation in the cerebral palsied population than in the 'normal' population.

d) Cerebral palsy is rarely accompanied by convulsive disorders.

e) Cerebral palsied children do not attend public Schools.

f) Most children with osteogenesis imperfecta (congenital bone-disease) have normal intellectual ability.

g) Most children with cystic fibrosis (genetic disorder affecting pancreas/lungs) die during childhood.

h) Epilepsy is treated primarily through chemotherapy (drug administration to control the problem).

- i) In treating a person having a grand mal seizure (severe convulsive disorder involving loss of consciousness), it is wise to place a pencil or tongue depressor between the teeth to prevent swallowing of the tongue. _____
- j) A lavatory stall can be made accessible to all persons in wheelchairs by placing grab bars at convenient heights. _____
- k) Thick door mats should be used in front of doors to give wheelchair travelers better traction on wet days. _____
- l) Open-riser stairs are particularly well suited for persons who are wearing braces. _____

OH 113. Fill in the blanks.

- a) The suffix that means paralysis, or inability to move, is _____
- b) _____ means before birth, _____ means during birth, and _____ means after birth.
- c) A condition characterized by low tolerance for exercise is _____
- d) Children with asthma typically have difficulty in _____
- e) Diabetes is controlled through _____
- f) A temper tantrum may sometimes be confused with _____ seizure.

- g) A child who falls to the ground, thrashes around and loses bladder control may be suffering from a _____ seizure.
- h) The type of seizure that often goes unnoticed is a _____
- i) Standards for the elimination of architectural barriers have been developed in USA by an organization called _____
- j) Doorways should be at least _____ inches wide to accommodate wheelchairs.
- k) Ramps should be at least _____ feet wide.
- l) Lavatory towel dispensers and other appliances should be mounted no more than _____ inches above the floor.
- m) Obstructions on walkways should not be more than _____ high or they may cause travel problems.

OH 114. Name the ambulation disabilities caused by cerebral and noncerebral factors.

OH 115. Name the disabilities that affect vitality.

OH 116. Name the convulsive disorders (epileptic seizures).

OH 117. Name different types of cerebral palsy.

OH 118. Name the disorders associated with cerebral palsied population.

OH 119. Which type of supportive service is used to minimize muscular deterioration in children with diseases such as muscular dystrophy, spinal muscular atrophy, and polio.

OH 120. When is it necessary to call in professional help for a child having a grand mal seizure?

OH 121. Differentiate between a prosthesis and an orthosis.

OH 122. When would it be inappropriate to recommend an assistive or adaptive device for use by a person with physical disabilities ?

OH 123. Describe the conditions under which you would recommend that orthopedically handicapped children be placed in the regular classroom for their education.

OH 124. What criteria would you propose for selecting physically disabled children for placement in a self-contained special class ?

OH 125. List one question you should ask a physically disabled child's parents in each of the following areas to help develop procedures for carrying for the child.

- a) Medical
- b) Travel
- c) Transfer
- d) Communication
- e) Self-care
- f) Positioning

A S S I G N M E N T S

K E Y

SE I Components of the definition should include:

- instruction that is part of the regular education programme.
 - instruction that is individually designed to meet the needs of exceptional children.
 - designed for children whose needs cannot be met by the regular school curriculum.
 - may call for supportive services from speech pathologists, audiologists, physical and occupational therapists, psychologists, counsellors, and others.
- SE 2. Incidence includes all persons who may have a condition during their lifetime; prevalence includes only those who have the condition at a specific point in time.
- SE 3. a) Education should be individualized.
b) Tasks should be sequenced from easy to difficult.
c) Students should be active learners.
d) Learning environments should be structured.
- SE 4. a) Labels lower the expectations of teachers.
b) Labels have little relevance for educational practice.
c) Children do not fit neatly into categories.
d) Labeled children are stigmatized.
- SE 5. a) Statement of child's level of performance
b) annual goals.
c) Short-term objectives.
d) time spent in regular education environments
e) related services
f) projected dates for initiation of services and the anticipated duration of services.
g) procedures for evaluation.

SE 6.

- Setting 1. Regular class placement with few or no supportive services.
- Setting 2. Regular class placement with consulting teacher assistance.
- Setting 3. Regular class placement with it inerant specialist assistance.
- Setting 4. Regular class placement with resource room assistance.
- Setting 5. Special class placement with part-time in regular class.
- Setting 6. Full-time special class.
- Setting 7. Special day school.
- Setting 8. Residential school.
- Setting 9. Homebound instruction
- Setting 10. Hospital or institution

- SE 7. a) False i) True
- b) False j) True
- c) False k) True
- d) False l) True
- e) False m) False
- f) True
- g) True
- h) True

- M.R. 8. a) True h) True
- b) False i) True
- c) True j) False
- d) True k) True
- e) True l) False
- f) False m) True
- g) False n) True

- MR 9. a) IQ
b) intelligence and adaptive behaviour
c) academic skill, interpersonal skill, social skill and independent function.
d) two
e) birth and the eighteenth birthday
f) EMR, TMR and S/PR.
g) lack of training of foster parents
h) rotations and reversals
i) writing
j) communication barrier
k) modify
l) small units
m) large segment
n) borderline intelligence

- MR 10. a) normalize
b) mainstreaming
c) IED
d) common schools
e) parents
f) 70
g) severe or profound
h) physical agents
i) their constitutional rights
j) a majority

MR 11. d)

MR 12. b)

MR 13. a)

MR 14. a)

MR 15. d)

- MR 16(A) a) Significantly subaverage general intellectual functioning.
b) Impairments in adaptive behaviour.
c) Manifestation during the developmental period.
- MR 16(B) 2%
- MR 16(C) a) Methodology
b) Type of population studied
c) Definition of mental retardation
- MR 17 a) (3)
b) (1)
c) (4)
d) (2)
e) (6)
f) (7)
g) (8)
h) (5)
- MR 18 (a) True
(b) False
(c) False
(d) True
(e) False
- MR 19 b
- MR 20 b
- MR 21 c
- MR 22 (a) Immunization of children
(b) Adequate nutrition to children
(c) ~~Prompt~~ control of fever in children.
(d) Immediate control of fits in children.
- MR 23 c

- VH 70. a) those developed for visually impaired
b) those adapted for use with visually impaired
c) those developed for use with seeing population and used as is for visually impaired.

- | | | |
|--------|-------------------|-------------------|
| VH 71. | Visual efficiency | motor performance |
| | sensory abilities | language |
| | other impairments | intelligence |
| | achievement | |

- VH 72. b) VH 82. b)

- VH 73. a) VH 83. b)

- VH 74. c) VH 84. c)

- VH 75. a) VH 85. c)

- VH 76. b) VH 86. b)

- VH 77. b) VH 87. b)

- VH 78. c) VH 88. c)

- VH 89. b) VH 89. b)

- VH 80. a) VH 90. c)

- VH 81 c) VH 91. a)

- VH 92. b)

- HH.93.
- a) Cortex
 - b) fifth month
 - c) deaf
 - d) functional
 - e) sensori-neural
 - f) central auditory disorder
 - g) audiogram
 - h) 500, 1000; and 2000
 - i) speech discrimination

- j) 12 months
- k) 60-80 , 2 years
- l) 80
- m) pediatrician, Otologist
- n) Auditory training
- o) lip reading
- p) Oralists
- q) audiologists
- r) residential setting
day school, special class and
resource room
- s) 40 and 60
- t) speech and language
educational, vocational social and
emotional
- u) louder, clearer
- v) hard of hearing, deaf
- w) Oral and manual

- HH. 94. a) False g) False
b) False h) True
c) False i) False
d) False j) False
e) True k) False
f) False l) True

- HH. 95 a) transmitter
b) medium
c) receiver

- HH. 96 Sound is created by the vibration of some object. This vibration is carried across some medium and can be heard by the ear.

- HH. 97 a) conductive
 b) sensori-neural
 c) mixed
 d) functional
 e) central
- HH. 98 a) illness or disease for mother during
 pregnancy.
 b) child does not react to sounds.
 c) child does not engage in normal
 amount of vocal play.
 d) child does not pay attention in class.
 e) child says "huh" in response to questions.
 f) child cannot localize sound.
- HH. 99 a) Pure tone audiometric screening
 b) Pure tone threshold audiometry
 c) Speech audiometry
 d) sound field audiometry
 e) Behavioural play audiometry
 f) impedance audiometry
 g) evoked response audiometry
- HH.100 a) language/speech development
 b) educational adjustment
 c) vocational adjustment
 d) social adjustment
 e) personality and emotional adjustment
- HH.101 a) earmold not seated properly in the ear
 b) earmold is too loose
 c) may need new earmold
 d) earmold and receiver not firmly attached.

- HH.102 a) history of hereditary hearing loss
b) infection or illness of the mother during pregnancy
c) defects of ears, nose, or throat
d) low birth weight
e) prematurity
f) accident, infections, or illness of the child.

- HH.103 a) Frequent earaches or ear discharge
b) poor articulation, consonant sounds omitted
c) wrong answers given to easy questions
d) child often does not respond when called
e) hearing appears better when child faces speaker
f) child asks to have things repeated
g) child turns TV or radio up too loud

HH.104

HH.104.1 d)

HH.104.2 d) 104.9 d)

HH.104.3 a) 104.10 b)

HH.104.4 d) 104.11 b)

HH.104.5 b) 104.12 d)

HH.104.6 b) 104.13 a)

HH.104.7 c) 104.14 c)

HH.104.8 a) 104.15 d)

HH.105 mild	- 20 to 40 decibels
moderate	- 40 to 60 decibels
severe	- 60 to 80 decibels
profound	- more than 80 decibels

- LD.106. a) discrepancy
b) manifestation
c) focus
d) integrities
- LD.107. a) oral expression
b) basic reading skills
c) math reasoning
d) written expression
e) listening comprehension
f) math calculation
g) reading comprehension
- LD.108. a) labels do not really define discrete groups of individuals; they do not account for overlap between categories.
b) little evidence exists to support the use of one educational treatment for any particular label.
c) Biased tests can cause mislabeling.
- LD.109. a) observed consistently over time.
b) resistant to simple remedial teaching methods.
c) accompanied by a significant gap between achievement and ability.
- LD.110. a) Attention difficulty
b) Perceptual problems
c) Poor motivation/attitude
d) Poor sound/symbol association
e) Memory problems
f) Language deficits
g) Transfer difficulties
- LD.111. a) Physical
b) Environmental
c) Psychological

- OH.115. a) Congenital heart defects
b) Cystic fibrosis
c) diabetes
d) asthma
- OH.116. a) Petit Mal
b) Grand Mal
c) Psychomotor
- OH.117. a) spastic
b) athetosis
c) ataxia
d) rigidity
e) tremor
f) mixed
- OH.118. a) Communication disorders
b) Sensory disorders
c) Intellectual ability
d) Convulsive disorders
- OH.119. Physical Therapy
- OH.120. When seizure activity continues for more than five minutes, or when it appears that the person is going into repeated grand mal seizures.
- OH.121. A prosthesis replaces a body part and an orthosis supports or assists the body.
- OH.122. When a careful evaluation of the potential effect of the device has not been conducted.

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- OH.123. When medical, travel, transfer and lifting, self-care, and positioning needs can all be appropriately met in the regular classroom.
- OH.124. The existence of specific problems that would seriously interfere with the children's education in the regular classroom or medical, transfer and lifting, self-care, or positioning needs that can only be met by placement in the self-contained special class.
- OH.125. a) Medical Does the child take medication ?
if so, how often and in what amounts ?
- b) Travel Does the child require special arrangements to travel within the school building or the classroom ?
- c) Transfer How is the child transferred on and off the School bus ?
- d) Communication Can the child make his needs known to the teacher ? How ?
- e) Self-Care What special equipment does the child need ?
- f) Positioning What positions are best for specific academic activities ?
